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Austria Sch. 18	Indonesia Rp 2500	Portugal Esc 75
Bahrain Din 0.650	Italy L 1100	S. Arabia Rls 6.00
Belgium BFr 35	Japan Y550	Singapore S$ 4.10
Canada C$1.00	Jordan Fils 500	Spain Pta 100
Cyprus Mils 800	Kuwait Fils 500	Sri Lanka Rup 30
Denmark DKr 7.25	Lebanon L£ 6.00	Sweden SKr 5.50
Egypt E£1.00	Luxembourg LFr 35	Switzerland SFr 2.00
Finland Fmk 5.50	Malaysia Rin 4.25	Taiwan NT $65
France Fr 6.00	Mexico Pes. 300	Tunisia Din 0.600
Germany DM 2.20	Morocco Dh 6.00	Turkey L 160
Greece Dr 60	Netherlands Fl 2.50	U.A.E. Dh 6.50
Hong Kong HK$ 12	Norway NKr 6.00	U.S.A. $1.50
India Rup. 15	Philippines Pes. 20	

FINANCIAL TIMES

EUROPE'S BUSINESS NEWSPAPER

No. 29,293 — Monday April 9 1984 — D 8523 B

London fights to win back foreign investors, Page 16

NEWS SUMMARY

GENERAL

Shuttle repair mission setback

U.S. space shuttle mission will resume its attempt to retrieve the $77m Solar Max satellite after the failure of the tricky, manned space walk manoeuvre.

Astronaut Dr George Nelson flew 200ft from the shuttle to the satellite, but the docking pin he tried to install failed to connect properly.

Further attempts to grab onto Solar Max using the shuttle's robot arm also failed. Page 18

Clashes in Beirut

Fresh fighting in and around Beirut dampened prospects for a disengagement plan approved by a military commission of Lebanese army, Christian militia, Druze and Moslem groups. Page 2

Soviet 'spy' warning

Soviet fighter pilots complained of spy flights by Western aircraft in the Arctic and warned that if any intruded into Soviet airspace they would be destroyed. Page 3

Nine die in Chad

Nine French paratroopers were killed in an explosion near the central Chad outpost of Oum, the worst casualties France has suffered since dispatching soldiers to help Chad President Hissène Habré halt a southward advance by Libyan-backed rebels. Page 3

Cameroon coup fails

Forces loyal to President Paul Biya of Cameroon were back in control of strategic installations in the capital, Yaoundé, after an aborted coup attempt. Page 3

Ulster killing

Ulster magistrate's daughter Mary Travers was shot dead and her father Tom critically injured when they were ambushed by gunmen on their way home from church in Belfast.

Guinea freedom move

Guinea's military leaders, who seized power in a bloodless coup last Thursday, have decided to restore full labour and press freedom, Conakry Radio said.

Chinese border fight

Vietnam claims that more than a battalion of Chinese troops crossed into its territory in an escalation of fighting along the Sino-Vietnamese border. Page 2

Liberians pardoned

Liberian leader Samuel Doe pardoned 10 of 13 people sentenced to death last week for plotting to overthrow him.

Colonels on trial

Four Spanish army colonels face trial before a court martial tomorrow, accused of plotting a coup designed to thwart a Socialist election victory in 1982.

Oman barracks plan

The U.S. plans to build reinforced aircraft shelters and barracks in Oman as part of its expansion of military ground support in the Middle East.

Meningitis scare

Danish health authorities ordered the mass vaccination of 14,000 young people against meningitis, after more than 25 youths have been affected and one has died from the disease.

Former senator dies

Former U.S. Senator Frank Church of Idaho, a leading Liberal during more than two decades in the Senate, died of cancer over the weekend, aged 59.

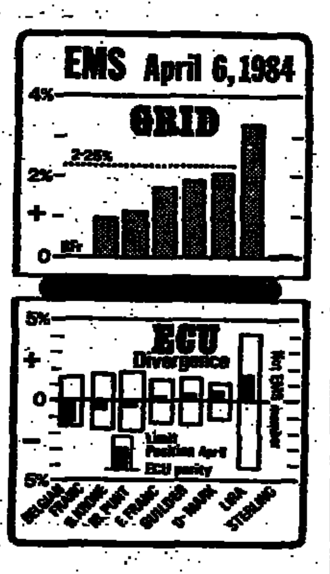
BUSINESS

Japan, US agree on trade quotas

JAPAN and the U.S. reached agreement on their long-running dispute over quotas on U.S. beef and citrus exports, under which the U.S. will be able almost to double its beef exports to Japan over the next four years. Page 4

ITALIAN lira recovered from a poor start in the European Monetary System last week, mainly as a reflection of renewed dollar strength. This depressed the D-Mark and relieved downward pressure on the weaker member currencies.

Tourist demand for the lira should increase with the onset of summer. Speculation of an imminent EMS realignment seems to have receded. The Belgian franc was again the weakest currency but required little support from the Belgian central bank. Currencies, Page 38



The chart shows the two constraints on European Monetary System exchange rates. The upper grid, based on the weakest currency in the system, defines the cross rates from which no currency (except the lira) may move more than 2¼ per cent. The lower chart gives each currency's divergence from its "central rate" against the European Currency Unit (ECU), itself a basket of European currencies.

EUROPEAN Community should consolidate its internal market and try to extend the benefits to the seven states of the European Free Trade Area, said a report by the European Research Associates. Page 4

UNEMPLOYMENT will continue to rise to 14½ per cent in 1988 unless the UK Government boosts growth to about 4 per cent, said Lloyds Bank's economic bulletin. Page 19

CHINA is to open up 14 coastal cities to overseas investment. It also plans to expand beer exports from 1986 after opening a brewery to be built with a $30m credit facility from 10 international banks.

OCCIDENTAL PETROLEUM, international energy and natural resources group, said "great progress" had been made in plans for development of the world's biggest open cast coal mine in China. Page 4

TURNER BROADCASTING, U.S. television and cable news group, and American Broadcasting Companies, could emerge as rivals for control of ESPN entertainment and sports network. Page 20

NEW ZEALAND trade unions will launch snap strikes over the next two weeks against companies which reported record or large profits last year.

UK INDUSTRY: Profitability of new company investment will be significantly reduced in the long run by the UK budget's tax changes, said an analysis by UK broker W. Greenwell. Page 10

SECURITY PACIFIC, 10th largest U.S. bank, plans to take an initial 5 per cent stake in the London stockjobbers Charles Pulley & Co to complement its 29.9 per cent stake in UK stockbroker Hoare Govett. Page 18

France pushes for united European voice within Nato

BY JOHN WYLES IN BRUSSELS

Plans are now well advanced for a meeting of foreign ministers of the seven-nation Western European Union (WEU) on May 23, which might lead to the development of a "European pillar" within the Nato alliance.

That is the basic objective of the French Government, which is leading efforts to revive the WEU.

Growing support for closer co-operation on security matters in Western Europe has been shown at preparatory meetings of officials. Those meetings followed a statement of aims in a French memorandum circulated towards the end of February.

Belgium followed the French with a supporting memorandum that emphasised the importance of ensuring that no development of the WEU should weaken the Atlantic Alliance.

That has also been a principal West German concern, but diplomats now say that Bonn's support for the French initiative has been crucially important in bringing it to fruition.

Of the other WEU members, Italy and Luxembourg are said to be cautiously in favour of exploring the idea, while Britain and the Netherlands remain sceptical.

Revival of the WEU as a forum for security discussions might have serious implications for the European Community's attempt to develop closer political co-operation.

It is no coincidence that the three countries most opposed to security discussions within the EEC are the three member states that do not belong to the WEU: Ireland, Denmark and Greece.

Speaking at a conference in Knokke, Belgium, on EEC-U.S. relations at the weekend, M Claude Cheysson, France's Foreign Minister, emphasised that, although Europe needed the U.S. for its defence, it could not be expected to share all American attitudes towards Eastern Europe.

M Leo Tindemans, the Belgian Foreign Minister, promised to work to ensure that a WEU revival would not lead to any decoupling from the U.S. or from the EEC.

"The WEU exercise cannot be a substitute for a development to be carried out by the Ten, nor can it be conceived or undertaken outside Nato," he said.

However, the need for a European pillar is derived from the regional military superiority of the Soviet Union, M Tindemans added.

A revived WEU would have the added advantage for France of compensating for its absence from Nato's military structure. That excludes it from the Euro-group, which tries to co-ordinate the policies and views of the European members.

French and Belgian ambitions for the WEU also cover closer co-operation between defence industries in Europe. That is regarded as essential if the "two-way street" in arms purchases between Europe and the U.S. is to become a reality.

There is, however, no feeling in France that Western Europe could or should seek to take over from the U.S. responsibility for its conventional defence. "We cannot afford the financial and human effort required," a French official said.

Europe's defence must continue

Continued on Page 18

U.S. interest rate rises cause mounting concern

BY MAX WILKINSON IN LONDON AND OUR FOREIGN STAFF

THE WORLD'S financial leaders will this week put sharply increased pressure on the U.S. administration to curb its budget deficits – to prevent a further rise in U.S. interest rates.

At the International Monetary Fund's interim committee meeting in Washington on Thursday, the other industrialised powers will tell the U.S. of their fears that further rises in interest rates could precipitate a new crisis for the world's debtor nations.

This renewed concern about the U.S. budget deficit and rising interest rates follows several weeks of upward pressure on rates in the U.S. credit markets, culminating on Friday with the announcement from the Federal Reserve Board that from today it would increase the U.S. discount rate from 8½ per cent to 9 per cent.

This will be the first change in the discount rate since December 1982. The U.S. prime rate has already risen by 1 percentage point to 12 per cent within the last month.

Over the weekend, Sr Ernane Galveas, the Brazilian Finance Minister strongly attacked the recent rise in the U.S. interest rates, and warned that the Reagan Administration was "playing with fire."

Just before leaving Rio for the interim committee meeting, Sr Galveas said that U.S. interest rates were "causing more havoc than the entire oil crisis."

Brazilian authorities estimate that their debt servicing bill will rise by $700m over the next 12 months if the recent 1 per cent U.S. prime rate rise is maintained through 1984. More than 70 per cent of Brazil's $93bn foreign debt is linked to floating interest rates.

The attack on the Reagan Administration's fiscal policies marks a distinct change of approach by Brazil, which has sought throughout its 18-month long debt crisis to avoid giving offence to the U.S. First reactions earlier in the week to the two stage jump in the U.S. prime rate had been muted.

At the IMF conference, anxieties about the world's debt problems are likely to dominate most of the informal talks between ministers and central banks.

In particular, they will be discussing what response they should make if Argentina's current talks with the Fund over an adjustment programme should run into serious difficulties. This programme is crucial to the debt rescheduling package which is needed for Argentina to avoid a default on its interest payments.

Apart from the debt issues, the main questions to be discussed at the formal and informal sessions next week in Washington will be:

- The world economy: A continued emphasis on tight financial policies and control of inflation is likely to be agreed by the major countries, despite generally improving world economic output.
- Aid to the Third World: Most countries will be hoping for final agreement on the next three-year replenishment of the International Development Agency's fund for soft loans to provide $9bn, the maximum the U.S. would agree to.
- Special Drawing Rights: The developing countries will renew their call for a substantial addition to the SDR 17.5bn ($18.6bn) which the Fund's members hold as currency reserves. However, the industrial nations are generally sceptical about whether a further issue of SDRs by the Fund is warranted.

Argentina urged to be realistic, Page 19; Focus shifts to money supply, Page 20

London eases commission rules

BY JOHN MOORE, CITY CORRESPONDENT, IN LONDON

THE London Stock Exchange today brings into operation its initial plans for dismantling its fixed scales for commissions charged by British securities firms. It is the stock exchange's first step in a plan that will lead to the abandonment of fixed charges on securities trading within the next 18 months.

In today's moves, stock exchange firms are to be allowed to negotiate commission rates on buying and selling overseas securities. As part of that change, the London exchange is allowing its firms to form international dealing subsidiaries to enable them to compete with big securities firms from outside the UK.

A big cut in certain rates of commission charged on dealings in British government securities – gilt-edged stock – also takes effect today. The cuts might be more than 20 per cent for large deals carried out by institutional investors in medium and long-dated gilts.

The relaxation of the London exchange's commission rules was prompted by an agreement with Britain's Department of Trade and Industry last summer that all commissions should be negotiable by December 1986. The stock exchange council has said that commission scales will be dismantled "simultaneously at a date not earlier than autumn 1985."

The international dealing companies allowed under the new rules will be incorporated with limited liability, be recognised members of the London exchange, but will be allowed to operate only in the role of a principal rather than as an agent.

The stock exchange council has ruled that, since those companies will be dealing in the international market largely over the telephone and mainly with professional investors, they will not be permitted to have a presence on the floor of the exchange.

Among the stockjobbers – or market makers – who have indicated that they are forming an international dealership are Akroyd & Smithers, Smith Bros, and Bisgood, Bishop. Stockbroking firms that have indicated that they are forming international dealerships are Grieveson Grant; Cazenove; Rowe & Pitman; Kitcat & Aitken; Hoare, Govett; Williams de Broe Hill Chaplin. Through the establishment of an international dealership, stockbrokers will be able to act as a principal or market maker for the first time in London.

The move is already seen as a prelude to the acceptance by the London exchange that the separate functions of stockjobbing and stockbroking may have to merge in the future if the British securities market is to be able to compete with overseas securities firms.

London Stock Exchange fight for foreign business, Page 16; Lex: U.S. bank buys stockjobber, Page 18

Nigerian accord on trade arrears

By Quentin Peel in London

NIGERIA HAS reached broad agreement with representatives of leading supplier companies on the terms and structure of rescheduling some $3bn in arrears of uninsured trade payments, following exhaustive talks in London at the weekend.

The key to the deal is an agreement by the Nigerian Government to reconsider the question of paying some post-maturity interest owed on the arrears, some of which have been due for as long as two years.

In return, the leading creditors are expected to accept the Nigerian proposal to pay off its short-term trade debts with six-year promissory notes, provided some further amendments are made to the structure of the deal.

Further talks will take place this week – involving financial and legal advisers to both Nigeria and the creditors – to finalise the details of the Nigerian letter of offer. The document, originally scheduled for publication last Wednesday, will probably be delayed another week.

Alhaji Abubakar Alhaji, the Nigerian Permanent Secretary for Finance who has been leading the negotiations, expressed confidence in the outcome yesterday before leaving for Lagos. "I think we have got the agreement," he said.

The talks began on Friday between a small group of British and Japanese creditors, and the Nigerian officials. Throughout Saturday, representatives of Unilever, the British group owed the largest individual amount, and Morgan Grenfell, the London merchant bank advising a group of more than 300 creditors, continued talks with the Nigerians and their financial advisers, merchant bankers S. G. Warburg.

The creditors have been seeking amendments to both the pricing and structure of the Nigerian deal. On prices they wanted some payment of post-maturity interest on the arrears, and an improvement on the 1 per cent interest rate over Libor offered on the promissory notes.

On the question of structure, they want stronger guarantees that the rescheduled payments would rank with all other medium-term Nigerian debt, including cross-default clauses to other loans, and provision made for a "note-holders' agent" or trustee to represent the creditors' interests.

The agreement on post maturity interest does not commit the Nigerian Government to payment, but means that it will consider each case on its merits. No agreement was reached on the interest carried by the notes.

German unions to take strike decision today

BY RUPERT CORNWELL IN BONN

WEST GERMANY'S engineering and print unions will decide today whether to push the country over the brink into its worst labour disruption for years, in support of their campaign for a 35-hour working week.

After the collapse on Friday of last ditch negotiations between employers and the 2.5m-strong IG Metall engineering union, pessimism grew over the weekend that a serious wave of strikes could no longer be avoided.

The first serious shots have already been fired by IG Druck, the printing and paper industry union. Stoppages by its members caused Süddeutsche Zeitung of Munich, one of the largest German newspapers, to lose its entire local edition on Saturday. Some regional editions of the mass circulation Bild Zeitung, were also affected.

At a meeting in Stuttgart, leaders of IG Druck are expected to choose between either a national strike ballot for the industry, or increased action against preselected individual targets.

But the real pointer is likely to come from a special session, also today, of the executive of IG Metall, whose size, as well as its strategic position in key sectors of German industry, gives its attitude a decisive importance.

The union is torn between its own need not to lose face in a climbdown, and the evident lack of enthusiasm of a fair proportion of its membership for all out strike action.

Yesterday, however, IG Metall received welcome new backing from the DGB, the central union federation, for its battle to secure a five-hour cut in the working week.

Frau Ilse Brusis, a member of the DGB executive, declared that both the engineering and printing workers could rely "on the solidarity of every union." The federation also again attacked the centre-right coalition government in Bonn for siding unequivocally with the employers in the dispute.

This backing has in turn only stiffened the support of the opposition Social Democrats (SPD) for the unions' demand. Herr Willy Brandt, the SPD chairman, told a weekend rally that mass unemployment (now standing at 2.4m in West Germany) "was just a chaotic way of shortening working hours."

But the Government's real worry now is that a serious outbreak of strikes, as opposed to the modest

Continued on Page 18

French expect rise in industrial investment

BY DAVID MARSH IN PARIS

THE FRENCH Government, which faces a crucial week weathering the storm over its planned run-down of the steel sector, could draw some comfort from forecasts indicating an 11 per cent volume rise in overall domestic industrial investment this year.

The investment predictions, showing rises particularly in the agrofood and intermediate goods sectors, came as M Laurent Fabius, Industry Minister, prepared for a peace-making visit to the troubled Lorraine steel region tomorrow and steel unions drew up battle plans for a mass march on Paris on Friday.

The forecasts, made in a survey last month of business opinion by Insee, the official statistics institute, represent a sharp upward revision of the projections delivered during the previous survey in November.

Although the survey does not cover other important sectors such as services, agriculture and energy, the optimistic responses point to a better-than-expected improvement in the investment climate despite the recession still hitting key industries.

The latest survey, predicting a 20 per cent rise in investment spending in current francs, compares with the 15 per cent increase (6 per cent in real terms) indicated by the November survey.

Insee, showing the depth of investment cuts over the past three years, commented that even if the survey's projections were realised, business spending would still only be back to around its 1981 level. Last year, industrial investment dropped around 5 per cent in real terms.

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CONTENTS

OVERSEAS NEWS

China increases forces inside Vietnam

BY MARK BAKER IN PEKING

VIETNAM claims that more than a battalion of Chinese troops have crossed into its territory in the escalating fighting along the Sino-Vietnamese border.

The Chinese force penetrated on Friday a kilometre into Vietnamese territory near Friendship Pass, on the border with China's Guangxi province, the Vietnamese embassy in Peking said. Chinese reinforcements had crossed the border on Saturday and ground fighting was continuing.

The alleged Chinese incursion into Vietnam, if true, is the first significant one since the border war of 1979, in which an estimated 20,000 Chinese soldiers were killed.

China has denied the Vietnamese allegation, but the latest despatch from Xinhua, the official Chinese news agency, said a detachment of Chinese frontier guards in Yunnan province had hit back at a group of Vietnamese troops, which had crossed into Chinese territory on Thursday, leaving "23 dead and wounded" within four hours.

Vietnamese artillery had continued to bombard Chinese positions at 20 places along the border on Thursday and Friday, Xinhua said.

"Chinese frontier guards hit back with their big guns, destroying many Vietnamese military installations and killing and wounding a number of Vietnamese soldiers," the agency said.

Both China and Vietnam have claimed intensifying artillery attacks by each other since last Monday.

The Chinese have acknowledged that their bombardment of Vietnamese border positions is part of a strategy to put pressure on Hanoi over neighbouring Kampuchea.

Prime Minister Prem Tinsulanonda of Thailand left Bangkok yesterday on a six-nation tour that will include a meeting with President Ronald Reagan and discussions about the Vietnamese occupation of neighbouring Kampuchea, Reuter reports from Bangkok.

His 20-day trip will also include meetings with leaders of Canada, Denmark, Yugoslavia and West Germany. His trip to Switzerland will focus on discussions with Thai ambassadors to Europe and Africa.

Meanwhile, Thai border troops were placed on full alert yesterday opposite an area of Kampuchea where Vietnamese troops and Khmer Rouge guerrillas are engaged in heavy fighting, General Arthit Kamlang-Ek, Thailand's Supreme Commander, said.

He said the alert was ordered because of the fighting about six miles inside Kampuchea's western province of Battambang.

The official China Daily newspaper said the attacks were linked with the current counter-attack by Thai troops against Vietnamese forces near the Thai-Kampuchea border.

China has claimed that its shelling of Vietnamese positions were purely in response to provocations, but "the counter-attacks waged by Thailand and China are believed to be the only way to deal with Hanoi," China Daily said in a commentary published on Friday.

"The counter-attacks are necessary until Hanoi truly expresses a sincere desire to withdraw completely from Kampuchea," it added.

Xinhua had said the Chinese attacks were in response to repeated attacks and incursions by Vietnamese troops since the beginning of the year. A number of Chinese civilians had been killed or wounded and extensive damage caused to buildings and agricultural areas, it said.

Many Western diplomats are sceptical about the Chinese claims. They believe China, a leading backer of the anti-Vietnamese coalition in Kampuchea, is keen to put further pressure on Vietnam during the dry season offensive near the Thai border.

Each April for the past three years China has reported attacking Vietnamese border positions after provocation.

Indian jute strike ends as port hopes rise

By Our Foreign Staff

INDIA'S jute dispute ended at the weekend and hopes rose that the country's longest-ever port strike may be coming to a close. But, on the political front, the violence in the northern state of Punjab continued.

The jute strike, also this sector's longest in history, ended on Saturday with nearly 25,000 workers getting a minimum pay rise of R65 (about £4.20) per month.

The strike, in the eastern state of West Bengal, had shut at least 55 mills for nearly six weeks. Indian Jute Mills Association officials, according to Reuter, said that the industry had lost more than R2.6bn (£167m) because of the strike.

Officials of the four main dockworkers' unions leading the 23-day-old strike held extended weekend talks on Government pay demands but were reported to be reaching a consensus for the 10 major ports in question.

One top official was quoted as saying that he hoped to take an "acceptable formula" to the Government.

In Punjab, where the Sikh sect is seeking greater religious and economic autonomy, grenade and gun attacks wounded eight Hindus at religious meetings, keeping communal tension high during Prime Minister Indira Gandhi's absence abroad.

Three people were wounded on Sunday in a grenade attack on a Hindu religious meeting, and five were wounded on Saturday night when gunmen fired on another religious gathering.

Harchand Singh Longowal, a top Sikh leader, warned that resentment against Government policies was growing. In a letter to Mr Prakash Sethi, the Home Affairs Minister, he said: "There is mounting resentment among Sikhs. . . I am finding it difficult to hold them in check."

The continuing troubles in Punjab prompted Mrs Gandhi to curtail her Middle East peace mission on behalf of the 101-member non-aligned movement, which she heads.

She was scheduled to discuss the Lebanon crisis, the Iran-Iraq war and other issues during a tour of Algeria, Libya, Egypt and Tunisia, but, citing "murderous sprees" in Punjab, she announced she would not visit Egypt and Algeria and would return tomorrow.

Mrs Gandhi arrived in Tripoli on Saturday and met the Libyan leader Col Muammer Gadaffi, who said he considered the visit "a good initiative to bring in a new phase of relations between the two countries."

Emir of Bahrain sees UK role in Gulf peace

BAHRAIN—The Emir of Bahrain, Sheikh Isa Bin Sulman Al-Khalifa, who begins a four-day state visit to Britain tomorrow, hopes that his talks with British leaders will contribuate to a settlement of the Iran-Iraq war.

"In our discussions, we hope that we shall be able to formulate new ideas which will contribute to the settlement of the dispute between Iran nad Iraq," he said in written answers to questions submitted by Reuters.

He said Bahrain had been affected as much as any other Gulf state by the three-and-a-half years war, which "threatens peace and security in the whole region . . . retards economic development in the area and invites foreign power rivalry."

The emir, who will have talks with Prime Minister Margaret Thatcher, also said: "We expect Britain and other West European countries to play a greater role in trying to resolve the Middle East problem." Reuter

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Fighting threatens Beirut plan

BY NORA BOUSTANY IN BEIRUT

FIGHTING broke out in and around Beirut yesterday dampening prospects for implementation of a disengagement plan approved by a multifactional military commission.

The commision, grouping representatives of the Lebanese army, Christitn militias, Druze and Moslem groups, endorsed a plan late Saturday for the creation of buffer zones between combattants in the heart of Beirut and the strategic mountain ridges to the southeast.

A special force of 2,000-3,000 internal security force (gendarmes), retired army officers and new recruits would be commissioned to separate the warring factions.

There were no indications of when this policing force would be formed and of the deadline for a pullback by army troops and militias from their present positions.

The security blueprint calls for the withdrawal of adversaries to specific points away from battlefronts. The buffer zonse vary in width from 15 metres to 700 metres side of the lineof separation, depending on the geographical location and intensity of fighting.

A higher political-military committee in charge of stabilising a ceasefire and paving the way for political reforms still has to approve the disengagement proposals. Moslem opposition figures have complained that Amin Gemayel, the President, is procrastinating on promised changes concerning the army command structure and political concessions.

The President is seeking Syrian help to pacify Beirut and halt hostilities between the army and Druze fighters in the mountain town of Souq al Gharb. He is hoping to meet President Hafez Assad, his Syrian counterpart, on Wednesday but there has been no official word from Damascus on th envisioned summit.

State-run Damascus radio gave notice in a commentary that Syria would not preoccupy itself with finding miracles for the Lebanese crisis.

Observers here noted that the Syrian regime was not ready to get too deeply involved in the Lebanese quagmire in order to avoid the embarrassment of failure and because it needed to concentrate on its own domestic worries and power struggles.

● Six days after Palestinian guerrillas struck in the heart of Jerusalem wounding 48 Israelis, Israeli planes Saturday raided a suspected guerrilla stronghold in Bhamdoun, east of Beirut. No casualties were reported and the damage caused to the former guerrilla base was minor.

Lalonde may seek top OECD post

By Bernard Simon in Toronto

MR MARC LALONDE, Canada's Finance Minister, is considering approaches from several member-countries of the Organisation for Economic Co-operation and Development (OECD) to make himself available for nomination as the Paris-based body's next Secretary-General.

Mr Emile van Lennep, the present Secretary-General, is due to retire next September.

A spokesman for Mr Lalonde said that Canadian embassies in OECD member-countries have been asked to gauge other governments' opinions on his possible appointment.

Mr Lalonde, 54, who speaks French, is a lawyer and political economist by training and a close confidant of Mr Pierre Trudeau, Canada's outgoing Prime Minister. He was appointed Finance Minister in September, 1982.

Forces loyal to Cameroon President back in control

BY QUENTIN PEEL, AFRICA EDITOR

FORCES loyal to President Paul Biya of Cameroon were yesterday back in control of strategic installations in the capital, Yaounde, following two days of sporadic fighting with members of the presidential guard attempting to overthrow the Government.

A communiqué issued yesterday by the Armed Forces Minister called on any remaining rebels to surrender to the police before midday, and the army was reported to be mopping up last pockets of resistance.

The failure of the attempted coup was sealed on Saturday night when President Biya, whose whereabouts had been unknown, came on the radio in an emotional broadcast to announce that "complete victory" had been gained over the rebel soldiers.

However, the coup attempt has seriously dented the reputation of the Cameroon as one of the most economically viable and politically stable states in Africa.

It underlines the continuing tension between the largely Moslem north and Christian south of the country, since the resignation in 1982 of President Ahmadou Ahidjo, himself a northern Moslem and head of state for 22 years since independence.

Reports in Paris identified the rebels as a group of Moslem northerners in the President's Republican Guard, possibly no more than 100 strong.

They began their action in the early hours of Friday morning, seizing key points, including the radio station, telecommunications headquarters, the airport and the Presidential palace.

Loyal troops were rallied by a colonel of the gendarmerie, and an army lieutenant-colonel, who ordered reinforcements from Douala, the country's commercial centre and largest city, according to French reports.

President Biya said in his broadcast that "regular units of our national army—who remained faithful to the constitution—fought methodically and with determination, and achieved complete victory by late Saturday morning."

He said the objective of the action was not mutiny, but "to achieve political power."

President Biya, the former Prime Minister and a southern Christian, succeeded ex-President Ahidjo as head of state when the latter resigned suddenly.

Relations between the two became increasingly difficult as President Biya moved to reinforce his own position, and dismissed a number of key northern Moslems who had been Ahidjo protégés.

Last year, President Biya accused his predecessor, now living in exile in the south of France, of plotting to return to power. At a trial in February, the former president was sentenced to death *in absentia*, along with two former aides.

In Paris yesterday, M Felix Tonye M'Bog, the Foreign Minister, linked the coup attempt to the trial, blaming the action on "regionalists and separatists."

President Ahidjo was an authoritarian and often ruthless leader, who nonetheless managed to hold together a country which had been split by a bloody pre-independence civil war.

His relations with France, the former colonial power of the largest part of the state, were never entirely easy, unlike those with President Biya, a technocrat.

Mondale has majority in Wisconsin caucuses

By Reginald Dale, U.S. Editor, in Philadelphia

FORMER Vice - President Walter Mondale reversed his defeat in last week's non-binding Wisconsin primary by winning a clear majority in the state's Democratic caucuses at the weekend.

Mr Mondale won 54 per cent of the caucus vote, against 29 per cent for his chief rival, Senator Gary Hart of Colorado, and 15 per cent for the third remaining candidate, the Rev Jessie Jackson.

The vote translated into 46 Mondale delegates to July's nominating convention in San Francisco and 25 for Senator Hart, according to unofficial estimates. It was not clear yesterday whether the complex voting rules would allow Mr Jackson any delegates.

In Tuesday's open "beauty contest" primary, in which about 20 times the number of people voted, Mr Hart beat Mr Mondale by 46 to 42 per cent. Mr Hart attributed yesterday's reversal to the fact that only generally pre-Mondale party leaders and activists had attended the caucuses.

Nevertheless, the results gave a further boost to Mr Mondale in advance of Tuesday's important primary in Pennsylvania, where the latest Washington Post/ABC News "tracking poll" showed the two men neck and neck with 41 per cent each.

With the Wisconsin delegates included, the latest unofficial count by ABC News gave Mr Mondale 964 of the 1,967 Convention delegates needed to win the Presidential nomination against 550 for Mr Hart, 145 for Mr Jackson and 465 uncommitted.

W. German chemical sales boom

BY JONATHAN CARR IN HANOVER

THE RECOVERY in the West German chemical industry is gathering pace with record sales, better use of capacity, and more jobs expected in 1984.

The industry's association, the VCI, said that turnover was up by 15 per cent in nominal terms in the first quarter, with foreign sales even more bouyant than those at home.

Although the January-March results are being compared with a particularly weak first quarter of 1983, the likelihood is that turnover for this year as a whole will rise by over 10 per cent to more than DM 140bn (£11.6bn).

Already, many chemical companies are working at close to full capacity, and a growing number, especially in south Germany, are taking on extra labour.

One reason for the rising demand at home is that dealers, expecting a marked increase in chemical producer prices after last year's stagnation, are now buying heavily to build up stocks.

According to the VCI, chemicals turnover last year rose by 7.6 per cent to DM 126.8bn with foreign sales up nearly 10 per cent and home sales up 6 per cent. The number of employees fell by 1.8 per cent to 549,000.

Rejecting accusations that the sector might be becoming less innovative than its foreign competitors, the VCI stressed that last year alone, the chemical industry spent DM 6.4bn on research and development—roughly as much as it spent in the same period on investments.

The next two decades promised to bring a boom in innovation worldwide, in which the German chemicals sector would fully share.

The VCI's optimistic tone is typical of the buoyant mood at Hanover's Industrial Fair, at which nearly 7,000 companies are exhibiting and which closes on Wednesday. The number of visitors has been even bigger than expected, and seems bound to top last year's 600,000.

Soviet warning on U.S. Arctic flights

MOSCOW – Soviet fighter pilots complained yesterday of frequent spy flights by Western aircraft in the Arctic and warned that if any intruded into Soviet airspace they would be destroyed.

Pilots at an unidentified northern airbase told the newspaper Trud that Nato jet reconnaissance aircraft and even helicopters repeatedly patrolled on the very edge of the Soviet air frontier along the Russian Arctic coast.

"If the enemy should think of violating the border of the U.S.S.R. he will immediately be faced with the firepower of the Air Defence Forces," one senior air official told the newspaper.

An Air Defence general drew a direct parallel with the shooting down of a South Korean airliner in the Far East last September in which all 269 people on board were killed.

The general said the jumbo jet had been sent in on a spying mission which had been a "major military-political provocation" and showed that Russian Air Defence pilots in the Far East and the north had to be on constant alert.

The U.S. and South Korea have strenuously denied Soviet charges that the airliner was on an espionage mission for U.S. intelligence.

Trud quoted Soviet pilots as saying that Western aircraft were very careful when they approached the Soviet air border because they knew "they would not go unpunished" if they crossed it.

The pilots said the U.S. sent SR-71 high-altitude spy aircraft and RS-135 reconnaissance aircraft from bases in Britain to the Soviet Arctic coast. Other patrols were carried out by U.S. and West European fighters and even ship-based helicopters, they added.

The report said the missions were intended to probe Soviet radar defences and scrambling routines and size up the kind of resistance which U.S. strategic bombers would meet.

Although the area was not identified, it appeared likely the patrols were near Soviet missile and naval bases on the Kola Peninsula.

The Trud report was published to mark Soviet Air Defence Forces day today.

Reuter, AP

Zimbabwe SE statement likely

BY TONY HAWKINS IN HARARE

A STATEMENT on the future of the Zimbabwe Stock Exchange may be made this week in the wake of last month's sweeping new exchange control regulations.

The new measures included a proposal whereby the Zimbabwe Government will acquire the pool of blocked foreign securities held by nominee companies in Zimbabwe on behalf of both residents and former residents.

The proposed share acquisition is being challenged in the courts both here and in South Africa, but the immediate concern is whether the Zimbabwe Stock Exchange can survive without the external pool.

Brokers say that some 90 per cent of their turnover was in external securities prior to the suspension of such trading in mid-March.

There are only two broking firms left in Zimbabwe and one of them is expected to close.

Market officials say that the existing legislation requires at least two broker firms to make a market. If one closes, the Government will have to allow corporate membership by financial institutions to keep the market alive.

The market is also seeking a ruling from the Government on the future of so-called dual register stocks. These are shares in Zimbabwe companies—such as Falcon Mines, Wankie Colliery and MTD Mangula—quoted on foreign stock markets and therefore treated as external securities.

It seems unlikely that the Government would want to sell such assets abroad and even less likely that there would be any willing buyers.

Brokers say that although no decision has been announced as to who will sell the foreign securities once the Zimbabwe Government purchases them, the expectation is that Morgan Grenfell will handle the transaction.

Meanwhile, Dr Bernard Chidzero, Zimbabwe's Finance Minister, is to attend the interim meeting of the International Monetary Fund board of governors in Washington this week, amid speculation that Zimbabwe will have substantially to re-negotiate its existing standby agreement.

Frankfurt runway protest fears

FRANKFURT — Frankfurt Airport's controversial third runway is due to open on Thursday, but protesters are not giving up efforts to prevent the 2½-mile strip going into operation.

Groups of protesters against Runway 18-West, as it is named, have called for a series of peaceful demonstrations lasting throughout the week.

Police, however, fear the protests will lead to a repeat of the 1981 and 1982 demonstrations. These turned into running battles with protesters, when masked and helmeted youths threw Molotov cocktails, and thousands were injured.

"We expect clashes and have made preparations," a police spokesman said. An airport spokesman declined to give details of security but said: "Everything necessary has been done."

Herr Walter Waisz, one of the organisers of a local protest group, said: "The runway is a fact. It's there. But we won't accept it. The concrete is there and there is a wall around it. But I accept it as much as I accept the wall in East Germany."

The fight to stop the runway began as soon as it was proposed in the 1960s to cope with expected air traffic growth at the airport, the busiest in Europe after London's Heathrow.

Opponents say the runway will cause an almost unbearable increase in noise in surrounding villages.

Reuter

Grenada parties unite to fight election

By Our Foreign Staff

THE MIDDLE-of-the-road Grenada National Party (GNP) is to fight the forthcoming elections in Grenada jointly with the U.S.-supported Grenada Democratic Movement and the National Democratic Party.

This was announced in Barbados at the weekend by Mr Herbert Blaize, 66, leader of the GNP and a former Premier of Grenada. Mr Blaize said he expected the elections to take place in the last four months of this year.

Congress outcry grows at mining of Nicaragua ports

BY OUR U.S. EDITOR

ANOTHER Congressional outcry over President Ronald Reagan's Central American policies was brewing in Washington as further details of the U.S.-controlled mining of Nicaraguan ports were revealed at the weekend.

Members of Congress said the latest disclosures would increase pressure on the Administration to stop the mining.

It would also reinforce efforts in the House of Representatives to block Mr Reagan's request for another $21m (£15m) in aid to the U.S.-backed "contra" Nicaraguan rebels, which was approved by the Senate last week, they added.

U.S. officials confirmed that Americans working for the Central Intelligence Agency had been supervising the mining in recent months from a ship off Nicaragua's Pacific coast. The mines were being placed by an élite group of Latin American commandos, using small, high-speed boats.

The intelligence ship, while well within the 200-mile territorial limit claimed by Nicaragua, was outside the 12-mile limit that the U.S. respects, the officials said.

Meanwhile, the New York Times reported yesterday that the Reagan Administration was drawing up "routine" contingency plans for the possible use of U.S. combat troops in Central America if its current strategy for defeating leftist forces had not worked by 1985 or 1986.

Hugh O'Shaughnessy adds: Britain would continue to press the Reagan Administration to halt the mining of Nicaragua ports, Mr Ray Whitney, Minister of State at the Foreign and Commonwealth Office, said in a radio interview yesterday.

His undertaking came after he was pressed by Mr Denis Healey, the Opposition foreign affairs spokesman, to do more to halt the mining which has jeopardised the lives of British crews in Nicaraguan waters.

French soldiers to stay in Chad despite deaths

By Our Paris Staff

THE FRENCH Government is keeping firmly to its military peace-keeping commitment in Chad in spite of the death of nine soldiers and wounding of six others in a land-mine incident announced at the weekend.

The deaths, qualified by M. Charles Hernu, the Defence Minister, as an "accident" rather than as a result of enemy action, represent by far France's biggest setback since it sent 3,000 troops into the central African country to defend the government against Libyan-backed rebels last August.

The Defence Ministry said the deaths were "probably" caused by explosion of a mine. A representative of Chad's opposition movement Gunt said in Brussels that the deaths occurred when French forces stumbled on a mine field, and claimed that Chad government troops were also killed and wounded.

Latin America debt plea

BY HUGH O'SHAUGHNESSY

THE UNITED NATIONS Economic Commission for Latin America (ECLA), the region's principal think-tank, has called for the renegotiation of Latin America's $350bn (£240bn) foreign debt.

In a resolution adopted by a large majority on Friday night at the Commission's 20th congress in Lima, ECLA said that the present debt crisis was principally a consequence of factors outside the control of debtor countries, including high interest rates, a cut in the inflow of foreign funds and a drop in international trade.

The resolution was objected to by Britain, France, Spain, the Netherlands, the U.S. and Canada who abstained.

ECLA, which collaborated in mounting the conferences of Latin American governments last year in Caracas and this year in Quito to consider the foreign debt crisis, has for long advocated easier terms for Latin American borrowers.

UK set to send envoy to Angolan rebels

Britain is willing to send an envoy to Angola to meet anti-government rebels in return for the release of 16 British workers they are holding, Mr Malcolm Rifkind, junior foreign minister, said in London yesterday, Reuter reports.

In Lisbon a spokesman for the National Union for the Total Independence of Angola (Unita) said his organisation was awaiting the arrival of the British official. Unita is to release a group of Portuguese hostages in time for their return to Lisbon on Thursday, the spokesman said, and other foreigners, apart from the Britons, would be freed soon.

Plea for Africa

France and its 13 African partners in the franc zone economic group said Saturday "everything possible must be done" so that Africa does not become "the forgotten continent in development," AP reports from Paris. The statement was issued after a two-day meeting of finance ministers from France and sub-Sahara African nations.

6,000 held in Lagos

The Nigerian army has rounded up at least 6,000 people suspected of being criminals, illegal aliens or religious fanatics in Lagos, a military police officer told national television last night, Reuter reports.

Maputo power cut

A sabotage attack by anti-Marxist guerrillas knocked out power lines from neighbouring South Africa and left Mozambique's capital with reduced power, AP reports from Maputo.

Davignon warns on technology transfer

By John Wyles in Brussels

THE European Community could be heading for "a major fight" with the U.S. over the transfer of high technology, Viscount Etienne Davignon, the European Commissioner for Industry, said at the weekend.

Concern is growing in Brussels over the strength of demands from the Pentagon and the U.S. Congress for tighter control on the transfer of U.S. technology with a potential military application.

M Davignon said that if the Pentagon was left to make the decisions, "we are going into a major fight with the U.S. . . . which wil make chickenfeed of our agriculture dispute."

Speaking at a conference on EEC-U.S. relations at Knokk, Belgium, M Davignon stressed the implications of any tightening of U.S. controls for existing co-operative arrangements between European and American companies.

A senior U.S. Commerce department official said later that President Ronald Reagan had intervened three weeks ago in the disagreement between the Defence Department and the Commerce Department on the issue, ruling that the Pentagon should not take the lead.

Japan reaches agreement on U.S. beef and citrus quotas

BY STEWART FLEMING IN WASHINGTON

JAPAN AND the U.S. have reached agreement on their long-running dispute over quotas on U.S. beef and citrus exports, under which the U.S. will be able almost to double its beef exports to Japan over the next four years.

The new agreement, reached on Saturday in talks between Mr Shinjiro Yamamura, the Japanese Agriculture Minister, and Mr William Brock, the U.S. Special Trade Representative, followed an apparent breakdown in talks on Friday.

Mr Yamamura formally announced that he was returning to Japan, but a final effort over the issue, which Mr Brock said had become symbolic of Japanese intransigence on trade issues, was successful the following day.

The breakthrough follows signs of mounting U.S. pressure on Japan to make some trade concessions and represents an important political victory for the Reagan Administration and for Mr Brock. The Administration may be hoping that it will provide officials with some evidence to counter growing protectionist pressures in Congress.

Under the terms of the agreement, which seems certain to be roundly attacked by Japan's beef farmers, Japan has agreed to increase the U.S. beef quota by 6,900 tonnes a year over the next four years, raising the quota from the level of 30,800 tonnes a year which it reached in the last year of the expired agreement to 58,400 tonnes. It is estimated that this could raise the value of U.S. beef exports from around $500m to $800m annually.

The quota on oranges, which had been 82,000 tonnes will be raised by 11,000 tonnes a year over the four years of the agreement.

Terry Dodsworth adds from New York: U.S. import restrictions on Japanese cars since 1981 have made the Japanese substantially better off in several ways, according to a research study by Ward's, the influential U.S. publishing group which specialises in data on the industry.

U.S. consumers have suffered from higher prices and more restricted choice, and the Japanese have used the restraints to improve their marketing, the report says. By inducing an artificial shortage the image of Japanese products has been improved, and consumer price sensitivity reduced.

The restraints also provided an incentive to the Japanese to reposition their products and move up market, "even competing effectively where the domestic manufacturers have historically held the competitive edge," according to the report. Profits per car were increased, thus improving relationships between Japanese manufacturers and U.S. dealers.

Despite the quota system, the Japanese achieved a new sales record in 1983 of 1,897m units, and Ward's expects another record this year.

The import restriction policy has however generated about 14,000 jobs in America a year.

Fall in Soviet energy earnings could limit spending on imports

BY DAVID BUCHAN, EAST EUROPE CORRESPONDENT

NEWS OF trouble in the Soviet Union's largest hard currency earning sector, oil and gas, may make UK exporters wonder how much leeway the country will have to increase its imports this year.

Some 30 leading British companies, led by Lord Ezra, open a week of lectures today setting out the technical merits of their wares to potential Soviet buyers in Moscow.

The problems in the energy sector were revealed in Pravda, the Communist Party newspaper, and capped earlier sporadic Soviet Press reports of stagnating Soviet oil production. Pravda admitted that "serious setbacks" in the Tyumen fields of West Siberia have kept output for the past six months below target at 1983 levels.

At the same time, a senior official has conceded that short-term hopes of selling much more gas through the new trans-Siberian pipeline to Western Europe this year are being frustrated by weak demand. Though this has been obvious for some time in the West, the admission suggests that Soviet policy-makers may now be revising their 1984 hard currency revenue forecasts.

SOVIET OIL USE (million tonnes)

	1975	1980	1981	1982
Production	491	603	609	613
Imports	6	6	6	6
Domestic consumption	368	446	456	457
Exports	93	122	116	119

Source: *Petroleum Economist*

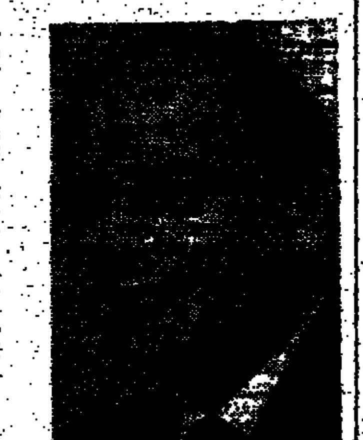
Certainly in the longer term, this combination of stagnating domestic oil output and gas export demand would be serious for the Soviet Union. Energy account for some three quarters of its hard currency earnings, and oil alone well over 50 per cent. On the face of it gloomier energy export prospects may constrain the Soviet ability to import.

But, for this year at least, the Soviet Union is not likely seriously to feel the pinch, for several reasons. First, the Soviet Union has very ample gold and hard currency reserves built up.

Second, a levelling-off in oil production does not, in the short term, automatically entail a plateau in exports. Western oil traders report a drop this year in Soviet exports, which averaged 1.5m barrels a day last year apparently partly due to weather and transport problems.

But the Soviet Union has increasing amounts of Middle Eastern oil at its disposal for re-export to the West. In the first nine months of 1983, the Soviet Union increased the volume of its energy oil exports to the West by between 15 and 18 per cent to offset an almost comparable percentage decline in energy prices, according to Wharton Econometrics.

A third factor is that 1984 is likely to see a fall-off in the biggest items in the Soviet import bill. The new Urengoy pipeline is now completed and thus requires no more Western components.



● Right: Lord Ezra

EEC tries to boost ties with Efta nations

By Paul Cheeseright in Brussels

THE European Community should consolidate its internal market and then try to extend the benefits to the seven states of the European Free Trade Area (Efta) in a way which provides mutual benefit for both sides, according to a new study published today.

EEC and Efta Foreign Ministers are to meet in Luxembourg this week to try to start a process of strengthening the free trade agreements which were signed ten years ago by the EEC and the individual states of Efta—Austria, Switzerland, Sweden, Norway Iceland, Finland and Portugal.

According to European Research Associates publishers of the report,* the case for consolidating West European free trade is overwhelming. "It would enable Western Europe to remain a competitive world industrial and trading power on a par with the U.S. and Japan," it says.

The last trade barriers between the two sides, relating to forest products, were removed at the beginning of the year creating an industrial free trade zone of 370m people and the Foreign Ministers are faced with the task of defining future methods of co-ordination.

There are two main but overlapping problems. First, the way in which the EEC completes its own customs union, and second the way in which co-operation between the two groups is adapted to the requirements of the new industrial revolution.

The strengthening of the EEC's internal market is seen by Efta countries as neo-protectionist, and getting round this would involve the application of the internal market to Efta. But, the report concedes there is little immediate chance of this approach being adopted as only West Germany is in favour.

The European Community and Efta in the 1980s, a multi client report by European Research Associates: Brussels 1984.

Hungarian export drive in UK

MORE THAN 40 Hungarian companies are launching a commercial assault on the British market in a week-long promotion drive opening today in London and Manchester, David Buchan writes. Hungary is fielding the strongest delegation to come to the UK for 12 years, headed by Mr Peter Veress, the Foreign Trade Minister.

Both Hungary and Britain are hoping to capitalise on their newly-improved political relations, following the February visit by Mrs Margaret Thatcher, the Prime Minister to Budapest. UK exports to Hungary rose by 18 per cent to £92m last year, and Hungarian exports to the UK by 22 per cent to £54m.

Mr Veress will see several UK ministers, as well as Mrs Thatcher. After the death of Mr Yuri Andropov, the former Soviet leader, Hungary asked for a "pause for reflection" before it started negotiations for a trade agreement with the European Community, apparently to test the mood in Moscow. UK officials now expect Mr Veress to raise the issue of British support for Hungary in getting a satisfactory EEC deal. Agriculture is of key importance to Hungary, Comecon's most successful food producer.

U.S. wine Bill 'a blunderbuss'

THE U.S. Wine Equity Bill, which is designed to open foreign markets to U.S. wine producers, has been described as "the legislative equivalent of shooting yourself in the foot" by Mr William Brock, the U.S. Trade Representative. The Bill is "worse than awful" and a "blunderbuss" approach to solving the export problems of the U.S. wine industry, he said, Louise Kehoe writes from San Francisco.

U.S. company in Chinese computer joint venture

HONG KONG—The Peking-controlled Ever Bright Industrial Company is to set up a joint venture with Burroughs of the U.S. to make mini-computers, Wang Guangying, chairman of Ever Bright said at the weekend.

The two companies will produce the B-25 type mini-computer in a Hong Kong factory and another plant in China will produce the B-20 type mini-computer.

Wang said the joint venture has obtained authority from the Paris-based Co-ordinating Committee for Multilateral Export Controls (Cocom) to sell the B-20 in China. Sales of the B-25 will be limited to Hong Kong and other non-Communist countries in Asia.

Reuter

William Hall adds from New York: Occidental Petroleum, the entrepreneurial international energy and natural resources group headed by the 85-year-old Dr Armand Hammer, says that "great progress" has been made in finalising plans for the development of the world's biggest open cast coal mine in China.

The U.S. company's statement follows months of speculation that the joint venture between the U.S. and China had run into serious financing problems and was likely to be abandoned.

SHIPPING REPORT

Rising demand for iron ore helps keep rates firm

BY ANDREW FISHER, SHIPPING CORRESPONDENT

DRY CARGO rates remained firm last week, with demand for larger size ships remaining a feature of the market as rising steel output continued to raise demand for iron ore.

While activity was less marked than the previous week, brokers saw signs that rates would go up further in April and May. The Russians remain in the market for ships to carry grain.

Forecasting a rise in world trade volume of more than 4 per cent this year after 2 per cent in 1983, Lambert Brothers Shipping said this would be a small but much needed improvement for the shipping industry.

Declining cargo trends since 1979, it said, had meant that over 500m tonnes of cargo had been lost to the shipping industry. Last year, 2.97bn tonnes were carried against 3bn in 1982 and 3.49bn tonnes in 1979.

Grain trade across the North Atlantic was quiet last week, with the strength of the dollar and the favourable EEC grain crop dampening demand from Europe for U.S. grains.

But the rate from the U.S. Gulf to continental Europe at $10.50 a ton, though marginally down on the previous week, was still far better than seen earlier in the year.

WORLD ECONOMIC INDICATORS

FOREIGN EXCHANGE RESERVES (U.S.$m)

	Jan. 84	Dec. '83	Nov. '83	Jan. '83
U.S.	6,295	6,289	6,974	9,490
W. Germany	37,134	37,313	37,907	40,648
Japan	20,669	20,364	20,161	19,497
UK	8,529	8,718	8,775	9,795
Italy	17,913	18,525	18,335	13,800
Netherlands	8,438	8,702	8,707	9,430
Belgium	3,632	3,776	3,843	3,219
	Dec. '83	Nov. '83	Oct. '83	Dec. '82
France	18,057	18,831	18,702	14,594

Source: IMF

TECHNOLOGY

EDITED BY ALAN CANE

CETUS IS DEVELOPING IMMUNOTOXINS WHICH KILL DISEASED CELLS

Guided warheads of genetics

BY RAYMOND SNODDY RECENTLY IN SAN FRANCISCO

TOXINS, Dr Robert Fildes explains with relish, are exquisite *in the way they kill*—a single molecule can kill a cell.

Dr Fildes, president and chief operating officer of Cetus, says the California company is already using genetic engineering tools and the killing power of natural toxins such as ricin to kill specific cancer cells in the laboratory.

The company, one of the major U.S. genetic engineering groups, believes it is well advanced in the international race to produce effective immunotoxins which can kill diseased cells without harming other tissue.

Immunotoxins are a combination of two molecues—a monoclonal antibody tied to a toxin molecule.

"It's essentially a guided warhead. The monoclonal antibody finds the target you want," says Dr Fildes.

Cetus hopes to get U.S. Food and Drug Administration approval later this year to begin human clinical trials on an immunotoxin which kills breast cancer cells.

"We have shown in laboratory experiments they work. You can take an immunotoxin made up of a monoclonal antibody specific for breast cancer coupled to a toxin molecule, put the immunotoxin in the presence of the breast cancer cells and it will kill at extremely low quantities," Dr Fildes added.

Cetus scientists have surveyed more than 20,000 monoclonals to find ones that are specific to major forms of cancer such as lung, colon and prostate as well as breast.

Cetus says it has developed genetic engineering methods of making both the toxin and the linker that binds it to the monoclonal antibody. Other companies, he believes, are doing the linking by chemical means which may not be so stable.

"Once you have the ability to make this in a bug you can play all sorts of games with it and it gives you greater flexibility to develop the most effective molecule for doing the treatment," *says Dr Fildes*, who comes originally from Ealing in West London. Cetus has selected the cancer market as one of its major strategic goals and has launched a three-pronged attack on the disease.

Genetically engineered beta interferon, a potential anti-cancer drug, is now undergoing human clinical trials. The other prong of the attack, interleukin—2 (IL—2), was approved at the end of last month by the FDA for human clinical trials to see if it is an effective treatment for cancer and Acquired Immune Deficiency Syndrome (AIDS).

IL-2 is a protein that exists naturally in small quantities in the human body and which helps to regulate the immune system which defends the body against infectious diseases and cancer.

Genetic engineering methods allow large enough quantities of IL-2 to be made to run extensive trials needed to see whether it can strengthen the immune systems of AIDS or cancer sufferers. Trials have already begun at the San Francisco General Hospital on AIDS, the often fatal disease of the immune system.

Animal experiments at the National Cancer Institute in the U.S. have already showed that recombinant IL-2 will reduce certain tumour growths and prevent the spread of tumours in mice.

"Our focus is to find a way to treat cancer effectively and we have taken three quite separate approaches towards the same target with the belief that one of these or a combination, will give an an effective treatment," Dr Fildes explains.

It will be several years before Cetus knows whether it has chosen the right weapons against cancer. Completing clinical trials and putting together a formal claim for a product licence from the FDA will alone take more than three years.

"The cancer market from a commercial point of view is an extremely attractive one. It is currently worth $300m a year in the U.S. It is growing at a fast rate and worldwide it is in excess of $1bn," Dr Fildes believes.

Cetus is concentrating 70 per cent of its research effort—$30m—a year on human health care.

Apart from cancer and diseases of the immune system the company is also working on treatments for serious viral infections. Together Dr Fildes believes the total market involved could be worth as much as $2bn with the most conservative estimates suggesting at least $500m.

But for most genetic engineering companies which like Cetus are specialising in human health care the problem is how to survive long enough to see whether the promise of the promise of the research can be fulfilled in useful products.

Although the "real play" is *in the human therapeutic area* Cetus is generating some revenue from "short term" products such as diagnostic kits—a genetic screening test for sickle ceh anaemia will be out later this year—and with instruments for the automation of biological and medical research.

Revenue is also coming in from the sale of its first recombinant DNA product, a vaccine designed to prevent a diarrheal *disease in new born pigs which* is being marketed by a Smith Kline subsidiary.

Dr Robert Fildes, now president and chief operating officer of Cetus.

Cetus, Dr Fildes says has enough money to see it through its five year plan. The company, he says, has around $90m in the bank and can call on another $55m from partners. But the nest egg is needed to pay for the setting up of manufacturing and marketing its products and the aim this year is to bring in $40m from all sources to cover the $40m that will be spent on research.

In the six months to December there was even a surplus of $600,000. Beyond the life of the five year business plan Dr Fildes sess significant opportunities in applying genetic engineering to *agriculture and* industrial chemicals.

Cetus recently signed a joint venture with Nabisco Brands to develop a series of enzymes to modify carbohydrates for food processing. The company is also in a joint venture with Weyerhaeuser, the natural products company, to look into enzymes which can modify wood.

"Such joint ventures bring knowledge of the marketplace—of what is really needed. What the hell does Cetus know about the marketing and processing of food products, about the wood industries and what is happening out there in those bloody mills?" Dr Fildes points out.

Last week Dr Fildes, who has held top positions in both Glaxo, the British pharmaceutical company and Biogen the U.S.-European genetic engineering company was out looking for more deals. He visited major pharmaceutical companies in Germany, France Switzerland and the UK to talk about possible joint ventures, or licencing or cross-licencing agreements.

TELECOMMUNICATIONS

Telephone with no strings attached

BY GEOFFREY CHARLISH

REGIONAL Telecom, a small company in Norwich, has developed to the prototype stage a cordless pay phone for which managing director Damien O'Connor sees a potential demand in hospitals, hotels, airports, restaurants and other public places.

Transfone, somewhat smaller than a two-drawer filing cabinet, is moved on castors to the point of use and then communicates with a British Telecom telephone socket via a 47 MHz radio link. It weighs no more than a television set. No wires trail between the Transfone and the wall where the socket is mounted, so there is no danger of people tripping up, especially in hospitals. The unit radiates only 300 milliwatts and has a range of up to 200 metres.

Transfone is equipped with handset, dialling key-pad, coin unit and telephone directories. When the handset is in use, the cord to the module becomes an aerial for transmitting the conversation to the phone outlet.

Although there is no major technical novelty, the company says it has successfully patented (in the UK) the coin-operated cordless phone idea so Mr O'Connor believes he will be free of competition for the time being.

He expects the price of the unit to be a little over £600. He points out that to rent a conventional coin operated telephone unit from BT costs £300 annually, so the purchased Transfone would "pay for itself" in about two years.

There is, however, an added attraction to revenue terms. The body of the unit will carry 16 advertising panels which can be sold at a suggested price of £2 per panel per week by the proprietor of the premises. At best then, there would be an added revenue exceeding £1,500 a year. The body of the unit will be available in rectangular or cylindrical form, to the taste of the buyer.

Transfone is unlikely to make its appearance until early 1986 says Mr O'Connor. Apart from the approvals needed from BABT (British Approvals Board for Telecoms), Regional Telecoms is seeking additional funding to carry the project through to full manufacturing. It is seeking total funds of £150,000.

Regional Telecom is seeking total funds of £150,000

Should this be obtained Regional Telecom plans to subcontract manufacturing to Elcon Systems of Fleet, Hampshire and will either market the units itself or through local PTTs in Europe such as BT.

Mr O'Connor's achievements to date are not without note. In 1978 he started Phone Centre International in Norwich, a retail establishment in which some 420 products ranging from decorative telephones to small PABX systems could be inspected and tried out.

There are now 42 other centres licensed in various parts of the country and the aim is to raise this to 100 by the summer. Mr O'Conor claims it is "the first national network of independent telephone supplies." Turnover was £0.5m in 1983 and is expected to double this year. More on 0603 615396.

Education

Domestic robots

INTERGALACTIC Robots sounds rather a grand name for a small Islington company with six employees. It has been set up to sell small robots for domestic and education use. These compete with products such as the BBC's Buggy and the Turtle.

Such robots usually have pens attached and are used for teaching the principles of robotics. At the end of April the company is to launch its Zeaker II model for less than £100. The original model I was sold under licence by Colne Robotics but the rights have now reverted to Droidsmiths.

The company was set up by Mr David Buckley and Mr Robin Bradbeer. More information on 01-358 2538.

Instrumentation

Small lasers

SPECTRA PHYSICS, based in California, has developed a helium neon laser tube which it claims is the smallest and lightest commercially available gas device to date.

The unit is only 4.4 in long and can deliver 0.5 mW of power at a wavelength of 633 nanometres. Applications are expected in scanning systems, industrial control and in medical instrumentation. The UK subsidiary is in St Albans, Herts, on 0727 30131.

MATERIALS PRODUCTION

Perfect crystals made in space

BY PETER MARSH

CLAIMS from the U.S. that gallium arsenide crystals grown in space will sell for $1m a kilogram by the 1990s have produced a sceptical response from Britain's biggest manufacturer of the material.

Microgravity Research Associates, based in Coral Gables, Florida, plans to produce gallium arsenide—which is increasingly important in the semiconductor industry—in orbiting laboratories.

In such a laboratory, gravity is reduced virtually to zero so that crystals grow free from distortions caused by weight. Gallium arsenide produced in this way will thus contain no defects, says the company, and will be useful in high-performance electronic circuits.

Semiconductor companies are turning to gallium arsenide as an alternative to silicon. Electrons travel through gallium arsenide very fast. Hence the substance is used for high-speed circuits, for example in telecommunications hardware that handles high-frequency signals.

Mr Bob Pace, a vice-president of Microgravity Research Associates, says he hopes to produce by 1990 40 kg of gallium arsenide made in space. The selling price would be $1m a kilogram — roughly 100 times the current price of gold. Gallium arsenide made conventionally costs about $20,000 a kilogram.

Mr Neville Murcott, of the sales department of the British company Cambridge Instruments, says he is "very cynical" about whether customers will ever want to buy large amounts of gallium arsenide made in space.

"By the 1990s engineers will have produced other ways of making defect-free gallium arsenide, basing their techniques on conventional processes."

Cambridge Instruments says it supplies more than half of the 18 kg of gallium arsenide purchased *annually* by electronics companies in Britain. According to estimates, world sales of gallium arsenide in 1982 stood at $25m, compared with $10m in 1979. Sales in 1986 will be $100m, say forecasters.

Gallium arsenide is conventionally produced by what is called the Czochralski process. Gallium and arsenic are mixed and heated to about 1,200 deg C. As the mixture cools, crystals *of gallium arsenide "seed" onto* a piece of solid material and are pulled from the melt.

Mr Pace plans for the space operation a new process called liquid-phase electro-epitaxy. An electric current is passed through a bath of gallium and arsenic at about 900 deg C to produce ions, which combine to produce the finished material.

Mr Pace expects by 1997 to sell 1,200 kg of gallium arsenide *produced in this manner*. By the end of the 1990s, the price should have dropped to $500,000 a kilogram, at which point annual production should reach 3,000 kg.

He says that customers will be prepared to pay the high price because the material has an almost perfect structure. Thus it will be used in very high-grade electronic circuits.

Microgravity Research Associates, set up *in 1979, last* year signed an agreement with the U.S. National Aeronautics and Space Administration. Under this, the government body will take the company's experiments into space for nothing.

Mr Pace plans seven small-scale experiments between 1986 and 1989 on Nasa's space shuttles. The experiments should test the technique by which he aims to turn out the material. Microgravity Research *Associates will then devise pro*duction hardware that will be taken into space in the 1990s.

This production equipment could be housed on the $8bn space station that Nasa engineers hope will be in orbit by 1992. As an interim measure, the Florida company could use an industrial unit for space that is planned by Space Industries Incorporated, an enterprise in Houston.

Space Industries hopes to build by 1988 a "space canister" some 4 metres in diameter and 12 metres long that would stay in space for months at a time. It would house experiments and materials processing hardware. About four times a year, astronauts from a space shuttle would visit the hardware to check that all was well and to make adjustments.

Mr Pace, who worked as an engineer for Nasa for 21 years before retiring says that the work by Microgravity Research Associates will cost $75m to $100m to 1989. Of this cash, Nasa will put up roughly half, with Mr Pace's company, which he says is backed by private individuals and venture-capital organisations, putting up the rest.

"Space industrialisation is one of the last opportunities that are left for entrepreneurial people," says Mr Pace. "But it requires a new attitude toward investment. You may have to wait five to seven years for a return, so the normal investment rules do not apply."

DOCTORS BEGIN TO ADOPT TECHNOLOGY

Medical computers make slow progress

MEDICAL Computer Services, MCS, in London has developed a computer system for private hospitals and clinics. The system gives full financial accounting and hospital administration on a UNIX-based super-micro.

MCS, *which is wholly* owned by Dearden and Farrow chartered accountants, has built up its business in private health care. The new Medax system can handle theatre and bed bookings, admissions, out patients, master patient indexes, billing, stock control.

The computer can be used to display current and projected bed occupancy, patients' details, expenditure and statistics. There is security access to prevent unauthorised use. MCS says that no special skills are *required to operate the system.*

A recent survey by Dr Norman Stoddard shew that the number of doctors in the health service now using computers in the surgery numbers about 300. Most are used for administration with 40 per cent of the work for repeat prescription, and 34 per cent for patient recall. A mere 8 per cent is used for diagnostic purposes.

BUSINESSMAN'S DIARY

UK TRADE FAIRS AND EXHIBITIONS

April 9-12
Audio Visual Exhibition (01-688 7788) **Wembley**

April 9-13
International Fire Exhibition—LIFE (01-387 5050) **Olympia**

April 12-14
Drillex '84 (0277 220609) **Kenilworth**

April 16-18
Solids Handling Exhibition—SOLIDEX (Uxbridge (0895) 58431) **Harrogate**

May 1-3
All Electronics ECIF Show (0799 26699) **Barbican**

May 1-3
Fibre Optics Exhibition and Conference (0799 26699) **Whitbread Porter Tun Rooms**

May 1-3
International Air Cargo Exhibition and Conference (St Albans (0727) 68633) **Manchester**

May 2-Oct 21
International Garden Festival (051-236 6090) **Liverpool**

May 9-11
Southern Aids for the Disabled Exhibition and Conference (Tunbridge Wells (0892) 44027) **Brighton**

May 15-17
Micrographics '84 Exhibition and Conferences (Godalming (04868) 6653) **Bloomsbury Crest Hotel, WC1.**

May 15-17
DEC User Show (01-837 3699) **Cunard International Hotel, W6**

May 20-23
Business to Business Exhibition (01-729 0677) **Barbican**

May 21-25
International Fire Safety Conference and Exhibition (01-248 4477) **NEC, Birmingham**

May 22-24
Riba computer exhibition and conference (01-637 8991) **Bloomsbury Crest Hotel**

May 22-25
Chelsea Flower Show (01-834 4333) **Royal Hospital, SW3**

OVERSEAS TRADE FAIRS

April 14-23
Milan International Trade Fair (01-637 3153) **Milan**

April 11-15
International Fur Trade Fair (01-734 0543) **Frankfurt**

April 16-19
European Trade Fair for Technics and Organisation in Banking (Luxembourg 2 09 31) **Milan**

April 24-27
Food and Hotel Asia (01-486 1951) **Singapore**

April 30-May 4
Direct Marketing Symposium and Exhibition (01/69 48 20) **Montreux**

May 5-9
Systems Components and Materials for Industrialised Building Sector Exhibition (01-486 1951) **Milan**

May 10-13
Asian Automotive and Accessories Exhibition (Guildford (0483) 38085) **Singapore**

May 10-16
International Packaging Exhibition and Display of Confectionery Machinery — INTERPACK (01-493 3893) **Dusseldorf**

May 20-27
International Aerospace Exhibition (01-651 2191) **Hanover**

May 22-25
Asian International Electronic Communications Exhibition and Conference — COMMUNICASIA (01-486 1951) **Singapore**

BUSINESS CONFERENCES

Current
Metal Bulletin: 2nd International Conference on Copper (01-330 4311) (until April 10) **London Marriott Hotel, W1**

April 11-12
FT conference: European banking (01-621 1355) **Milan**

April 12
Henley Centre for Forecasting seminar: The UK Economy (01-353 9961) **Carlton Tower Hotel**

April 13-14
Goethe Institute. The future of work, challenge and opportunity (01-581 3344) **50 Princes Gate, SW7**

April 18
Longman Seminars: Furniss v Dawson—the implications (01-242 2548) **Barbican**

April 25-27
Insig: Banks and computers (1) 763.07.24) **Paris**

April 26-28
Progress Foundation / IMF: Money—a search for common ground ((091) 68 92 69) **Lugano, Switzerland**

May 3
Institute of Directors: New legislative threats to directors (01-388 1811) **Cafe Royal, W1**

May 3-4
FT/The Banker: World gold conference (01-621 1355) **Hong Kong**

May 9
Longman Seminars: The electronic banking revolution—legal and security problems (01-242 2548) **Barbican**

May 10
IWP: Electronic mail in practice (01-242 8697) **Cavendish Conference Centre**

May 11
Longman Seminars: The Lloyd's Act (01-242 2548) **Barbican**

May 13-14
Meed: Law and business in the UAE (01-404 5513 **Abu Dhabi**

May 15
Business Briefings: Acting for Lloyd's underwriters, taxation planning and advice (01-381 1284) **Waldorf Hotel, WC2**

May 16
Institute of Marketing: Marketing for profit (Bourne End (06285) 24922) **Royal Lancaster Hotel, W2**

May 16
Institution of Taxation: Finance Bill 1984 (01-235 8847) **InterContinental Hotel, W1**

May 22-24
Royal Institute of Navigation: Global civil satellite navigation systems (01-589 5021) **Novotel, W6**

May 23-24
FT Conference: Sitev—World FT motor conference (01-621 1355) **Geneva**

Anyone wishing to attend any of the above events is advised to telephone the organisers to ensure that there has been no change in the details published.

UK NEWS

Conoco to develop four North Sea gas fields

BY RICHARD JOHNS AND DOMINIC LAWSON

AT LEAST four new North Sea gas fields are on the verge of development by Conoco, which could involve an initial investment of at least £750m.

The fields, all operated by the U.S. oil company, could contain up to 2.5 trillion (million million) cubic feet of gas, equivalent to about 8 per cent of UK proven reserves.

Conoco has been in contact with British Gas for several months. It has effectively begun the process of negotiating a sales contract for the gas.

The fields could be producing by the winter of 1988, on the assumption that British Gas requires the gas in advance of prospective supplies from Norway's Sleipner fields.

Last month British Petroleum (BP) announced development plans for four gas fields, which, like Conoco's, are in the southern gas basin of the North Sea.

Conoco's fields, of similar size to BP's, could produce at a rate of 450-550m cu ft per day – the equivalent of 10-12 per cent of last year's average UK demand.

The development of the four fields would cost about £750m at today's prices, excluding operating capital. Exploitation of the fields will require the construction of a number of unmanned platforms and the building of a pipeline leading to a central manned platform. It is likely that at least 70 per cent of the value of the development would be undertaken in the UK.

Conoco has just named the four fields North Valiant, South Valiant Vanguard and Vulcan. The final well required to appraise Vulcan was started last week. The four fields are in blocks 49/16 and 49/21 of the North Sea.

The volume of gas supplied could be boosted further if a decision is made to include in the development another gas find in a neighbouring block, 48/15.

On 49/16, Conoco is in equal partnership with Britoil. It has a 25 per cent stake in 49/21, where the other stakeholders are Britoil (37.5 per cent), Occidental (12.5 per cent), Atlantic Richfield (12.5 per cent) and Marathon (12.5 per cent).

Conoco is very close to agreement with British Gas on a contract to supply gas from an earlier discovery, the Victor field. The last of its wells has just been completed. The contracted output rate is an average of 150m cu ft per day, although the field has the capacity to produce at twice that rate.

Lucas in £20m investment

By Arthur Smith, Midlands Correspondent

LUCAS ELECTRICAL will tell shop stewards today of a £20m investment plan for its Birmingham starter motor and alternator factories. Radical changes in working practice will be required and jobs will be phased out.

The decision suggests a setback for Lucas's ambitious hopes of tackling the European automotive market in these products through a deal with Valeo of France. The two companies are almost equal partners in the French loss-making Ducellier.

Negotiations, which have involved the French Government, have stretched over nearly seven years.

Lucas is likely to tell workers that whatever option might have once been considered for investment in France, the nearly £20m being committed to its Birmingham operation will enable the UK to "stand alone."

BASE LENDING RATES

Bank	Rate	Bank	Rate
A.B.N. Bank	8½%	Heritable & Gen. Trust	8½%
Allied Irish Bank	8½%	■ Hill Samuel §	8½%
Amro Bank	8½%	C. Hoare & Co. †	8½%
Henry Ansbacher	8½%	Hongkong & Shanghai	8½%
Armco Trust Ltd.	8½%	Kingsnorth Trust Ltd.	10 %
Associates Cap. Corp.	9 %	Knowsley & Co. Ltd.	9½%
Banco de Bilbao	8½%	Lloyds Bank	8½%
Bank Hapoalim BM	8½%	Mallinhall Limited	8½%
BCCI	8½%	Edward Manson & Co.	9½%
Bank of Ireland	8½%	Meghraj and Sons Ltd.	8½%
Bank of Cyprus	8½%	Midland Bank	8½%
Bank of India	8½%	■ Morgan Grenfell	8½%
Bank of Scotland	8½%	National Bk. of Kuwait	[illegible]
Banque Belge Ltd.	8½%	National Girobank	8½%
Banque du Rhone	9½%	National Westminster	8½%
Barclays Bank	8½%	Norwich Gen. Tst.	8½%
Beneficial Trust Ltd.	9½%	People's Tst. & Sv. Ltd.	9½%
Bremar Holdings Ltd.	8½%	R. Raphael & Sons	8½%
Brit. Bank of Mid. East	8½%	P. S. Refson & Co.	8½%
■ Brown Shipley	9 %	Roxburghe Guarantee	9½%
CL Bank Nederland	8½%	Royal Trust Co. Canada	8½%
Canada Perm't Trust	8½%	■ J Henry Schroder Wagg	8½%
Castle Court Trust Ltd.	9 %	Standard Chartered ‖	8½%
Cayzer Ltd.	8½%	Trade Dev. Bank	8½%
Cedar Holdings	9 %	TCB	8½%
■ Charterhouse Japhet	8½%	Trustee Savings Bank	8½%
Choulartons	10½%	United Bank of Kuwait	8½%
Citibank Savings ¶	9½%	United Mizrahi Bank	8½%
Clydesdale Bank	8½%	Volkskas Intnl. Ltd.	8½%
C. E. Coates	9½%	Westpac Banking Corp	8½%
Comm. Bk. of N. East	8½%	Whiteaway Laidlaw	9 %
Consolidated Credits	8½%	Williams & Glyn's	8½%
Co-operative Bank *	8½%	Wintrust Secs. Ltd.	9 %
The Cyprus Popular Bk.	8½%	Yorkshire Bank	8½%
Dunbar & Co. Ltd.	8½%		
Duncan Lawrie	8½%		
E. T. Trust	9 %		
Exeter Trust Ltd.	9½%		
First Nat. Fin. Corp.	11 %		
First Nat. Secs. Ltd.	9½%		
Robert Fraser	9½%		
Grindlays Bank ‡	8½%		
■ Guinness Mahon	8½%		
■ Hambros Bank	8½%		

■ Members of the Accepting Houses Committee.
* 7-day deposits 5.25%. 1-month 6%. Fixed rate 12 months £2,500 8% £10,000, 12 months 8.25%.
† 7-day deposits on sums of: under £10,000 5¾%, £10,000 up to £50,000 6¼%, £50,000 and over 7¼%.
‡ Call deposits £1,000 and over 5¼%.
‖ 21-day deposits over £1,000 6¼%.
§ Demand deposits 5¼%.
¶ Mortgage base rate.

Co-op opens up credit card business

BY DAVID LASCELLES, BANKING CORRESPONDENT

THE CO-OPERATIVE Bank this week becomes the first bank to run an independent credit card operation in the UK. Until last weekend, its Visa card business was processed by Barclaycard's centre in Northampton. It will now be handled by the Co-op's new processing centre in Skelmersdale, North-west England.

Although the Co-op has few cardholders by UK standards – about 80,000 – its move marks a step towards greater competition in the credit card business, which will be intensified when Trustcard, with 2m cardholders, takes a similar step next year.

Mr Terry Thomas, the Co-op's chief executive, said "This will give us a degree of flexibility we never had before."

He hinted that the Co-op will be offering more *attractive terms* to cardholders in order to attract them away from other banks. These could relate to the cost of using a card, or the benefits attached to having one. He declined to give details but said changes could be expected by next autumn.

Britain's credit card business has evolved around two major organisations, Barclaycard (which handles a total 9m cards including Trustcard, Yorkshire Bank and Bank of Scotland, in addition to Barclays), and Access, which groups the operations of NatWest, Midland, Lloyds and several smaller banks, and handles about 7m cards.

While banks in these groups can theoretically set their own terms for their cardholders, in practice they are restricted by what the system can handle.

The Co-op took the first step towards independence several years ago when it became a member of the Visa card group in its own right. Three years ago it started developing its own processing centre using software from First Data Resources, the largest U.S. data processing company, which is part-owned by American Express. Exactly a year ago, it gave 12 months notice to Barclaycard that it wanted to quit.

Under the new arrangement, Barclaycard will still deal directly with merchants accepting Co-op cards, and will collect Co-op slips and transmit them to Skelmersdale. Barclays will also take the commissions on sales made with Co-op cards, but will pass them on to the Co-op after deducting a fee.

European Ferries seeks to bid for Sealink UK

BY ANDREW FISHER, SHIPPING CORRESPONDENT

EUROPEAN FERRIES, the main Channel operator, will press the Government to lift the ban on it bidding for Sealink UK. It claims that lower fares to the European Continent could result from a merger of the two companies.

Sealink, part of British Rail and run in partnership with continental companies, is up for sale to the private sector. City of London analysts have suggested the price could exceed £50m and even approach £100m.

The Monopolies and Mergers Commission ruled in December 1981 that a bid by European Ferries, which runs Townsend Thoresen ferries and had indicated its intention to make an offer for Sealink, would be against the public interest. It said that the merged company would dominate the market.

European Ferries believes, however, that now that Sealink UK is officially up for sale, as part of the Government's privatisation programme, it should be allowed to bid.

European Ferries' decision to urge the Government to remove the ban follows the refusal of British Rail and its merchant bank adviser, Morgan Grenfell, to allow it to receive information being sent confidentially to potential buyers.

Mr Nicholas Ridley, Secretary of State for Transport, said on Friday that about a dozen companies or consortia had shown interest in Sealink. Although he mentioned no names, these are known to include Trafalgar House, Peninsular and Oriental Steam Navigation (P & O), Sea Containers and a group including National Freight Consortium.

Mr Kenneth Siddle, chairman of European Ferries, said yesterday: "It is in the public interest that there should be a strong UK operator, efficient enough to withstand competition from subsidised French, Belgian and Dutch cross-Channel ferry companies."

He added that it was essential for Britain to have a major operator capable of running an efficient service and maintaining a modern fleet.

European Ferries is the biggest cross-Channel ferry company with about 40 per cent of the market, closely followed by Sealink, with P & O Ferries some way behind in third place. Hoverspeed, recently taken over by its management, is the only hovercraft operator.

Mr Siddle said that a merger between Sealink and European Ferries "should lead to lower fares as a result of greater efficiency." The past three years have seen rises in fares after a severe price war.

Trading automated

BY OUR FINANCIAL STAFF

LONDON'S foreign exchange and money brokers are finalising a new electronics deal confirmation system to replace the present paper-based methods which market participants use to tally their trades with each other. The new system, Automated Confirmation Service (ACS), is to be launched in May.

Traders presently confirm deals either by hand-delivering pieces of paper or sending telexes, both of which are prone to error and losses.

The new system will link up traders' computers through a special British Telecom network. Within two hours of a deal being struck, a broker will prepare confirmation which will either be sent direct through BT's Packet Switch System or deposited in an electronic mailbox.

The recipient's computers will automatically match up the confirmation with his own records – a job previously done by hand.

NatWest in action in 1983

Action for our personal customers

We welcomed over half a million new personal customers in 1983 and more students placed their confidence in us than in any of our competitors.

We will have 1,200 Servicetill machines in operation by the end of 1984 and the reciprocal arrangement with Midland Bank means that our customers are never far from a source of instant cash.

We also helped over 100,000 customers buy their own home and are the only clearing bank to operate a specialised mortgage lending company.

Action for our business customers

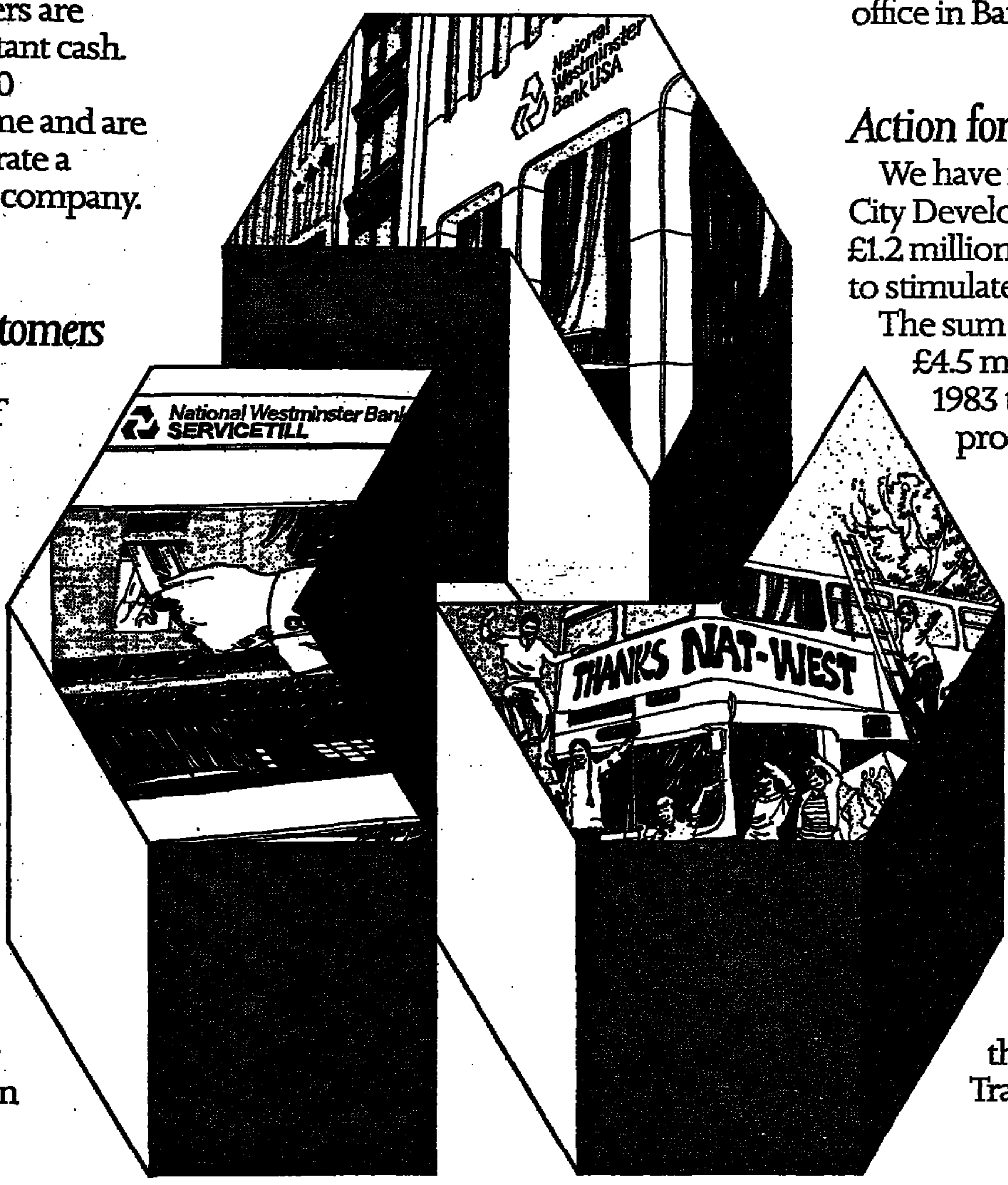
Our total lending to small businesses is now in excess of £4 billion. Within this figure over £1 billion has been lent to 90,000 companies through our Business Development Loan Scheme. We are the market leader in the Government's Small Firms Loan Guarantee Scheme – in September we were the first bank to announce agreed loans totalling over £100 million, over half of which went to new businesses, helping in the creation of 12,000 jobs.

Our support for the agricultural community is expanding and we are now lending well in excess of £1 billion to farmers.

Action for savers

We now offer a wide range of savings accounts through our branches and the NatWest Saver Service Centre.

In December, we introduced 'Piggy Bank' and 'On Line', two new schemes for young people which, to date, have attracted over 300,000 new accounts.



Action around the world

In September, the name of National Bank of North America was changed to National Westminster Bank USA. New offices have been opened in Dallas and Denver while, in the Far East, a representative office was opened in Kuala Lumpur and, in Europe, a marketing office in Barcelona.

Action for the community

We have initiated a special Inner City Development programme, making £1.2 million available to launch projects to stimulate job creation or training.

The sum was in addition to the £4.5 million the Bank committed in 1983 to its social responsibility programme.

An important feature of our community involvement is the secondment of NatWest employees to a wide range of charitable organisations.

Action for young people

In addition to the school-leaver recruits who have joined us in 1983, we have welcomed 200 young people into a programme of broadly based training and work experience within our branches under the Government's Youth Training Scheme.

Financial Highlights 1983

Money lodged	£55,200 million
Money lent	£45,200 million
Group pre-tax profit	£503 million
Retained profit	£322 million

Copies of the 1983 Report and Accounts, which include the Chairman's Statement in full, may be obtained from the Secretary's Office, National Westminster Bank PLC, 41 Lothbury, London EC2P 2BP, or at NatWest branches.

The Chairman, Lord Boardman, comments:–

In 1983 the dominant external factors were the drop in the rate of inflation in most developed countries – especially the United Kingdom – continuing high real interest rates and the disappointingly modest growth in world trade.

At home, the Government's financial policy of firm control of the money supply and containment of the budgetary deficit reduced inflation successfully, bringing it down to levels that we had not seen for some fifteen years. During the year, many industrial and commercial companies and firms, whose survival had appeared doubtful, established much better financial health – though, sadly, there are others where the future is still a cause for concern.

As one of the world's leading banks, we are an important component in the economy of the United Kingdom. We have a responsibility to assist wherever we can in the restoration of the prosperity of the country and to take full account of the national interest in all our operations.

There are signs that the worst of the recession is behind us. Forecasts for economic growth and for the rate of inflation are encouraging and confidence, a key factor, is returning. Business investment is also expected to recover. However, a further reduction in interest rates would ease the burden on industry, give rise to more capital investment and impact upon unemployment.

The Bank, as a major financial force, has responsibilities towards its shareholders, customers, staff and to the country's economy as a whole. It is our task to balance these interests, to maintain momentum in the provision of an increasing range of financial services and to achieve a level of profits that will enable us to meet the increasing demands of our business.

NatWest
The Action Bank

UK NEWS

NatWest may face extra tax bill of £577m

BY DAVID LASCELLES, BANKING CORRESPONDENT

NATIONAL WESTMINSTER, Britain's second largest bank, calculates that the Government's decision to phase out capital allowances could cost it up to £577m in extra taxes.

In the most precise statement yet by any of Britain's leading commercial banks on the impact of the recent budget, NatWest says in its annual report out today that the total additional bill could be as high as £961m. It doubts, however, that it would ever have to pay more than 60 per cent of this. One reason is that the budget also cut corporation tax rates.

Sixty per cent of £961m would amount to £577m, but NatWest said only that the extra cost would be in excess of £550m.

The extra tax liability arises because banks never expected to have to pay tax on earnings from their leasing business, thanks to capital allowances which amounted to 100 per cent in the first year. The abolition of those allowances removed the tax shelter from those earnings.

NatWest avoids saying how it will handle the huge tax problem, commenting: "Exactly how and when this will happen is not yet certain." Much depends, it says, on what leasing business it writes over the next couple of years as capital allowances are phased out.

The news is contained on a special sheet of paper slipped into the annual report, which was completed and signed seven days before the March 13 budget. NatWest has decided against adjusting its 1983 accounts in the light of the tax changes.

The figures shed some light on the dilemma facing NatWest. The bank could dip into its reserves and deal with the problem in one go, but £577m is equivalent to about one-fifth of its capital, and a rights issue would almost certainly be necessary to replenish it. Alternatively, the bank could pay the taxes out of earnings over several years, which would leave its capital unimpaired but produce lower profits.

NatWest has said only that "this matter is under consideration," but it seems to be veering towards the former approach.

NatWest's total group profits amounted to £503m before tax in 1983 compared with £439m the year before. Its tax charge was £102m, against £32m.

Ironically, Lord Boardman, chairman, said in his statement – also written before the budget – that NatWest's large leasing business helped to reduce the amount of corporation tax the bank pays. He noted that much of the benefit was passed on in the form of lower costs to the company's leasing equipment.

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Blow to investment profitability

BY MAX WILKINSON, ECONOMICS CORRESPONDENT

THE profitability of new company investment will be significantly reduced in the long run as a result of the budget tax changes, London broking firm W. Greenwell says in an analysis published today.

The analysis considers the effect of the phased withdrawal of the 100 per cent first-year allowance for capital investment against corporation tax and the reduction of corporation tax from the present 52 per cent to 35 per cent.

The main conclusion is that the cut in corporation tax will not fully compensate companies for the withdrawal of the first year allowances, when the changes have been fully implemented after March 1986.

In the interim period, Greenwell confirms the Treasury's general claim that companies will gain a substantial tax advantage from their investments because they will still be able to claim some tax allowance for the investment, whereas the profits eventually made by the investment will be subject to a lower rate of tax.

Greenwell says: "An important conclusion for the economy is that there will in all probability be a large but temporary boost to industrial investment during 1984-85 and 1985-86. The current economic recovery will, accordingly, broaden from consumer goods industries to capital goods industries."

A further analysis of the likely effect of the changes on company cash flow comes to a rather different conclusion, however. This is because the 100 per cent first year allowance for capital investment is to be replaced by annual allowances spread over the life of the plant.

Treasury jobless forecasts challenged

By Anton La Guardia

UNEMPLOYMENT will continue to rise for the next five years to a peak of 14½ per cent in 1988 unless the Government changes its policy radically to boost growth to around 4 per cent, says Lloyds Bank in its monthly economic bulletin published today.

The bulletin, written by Mr Christopher Johnson, the bank's economic adviser, says that this would mean abandoning hopes of eliminating inflation, but would not necessarily return the country to double digit inflation.

Mr Johnson believes that unemployment could be brought down to around 8 per cent without triggering rampant inflation.

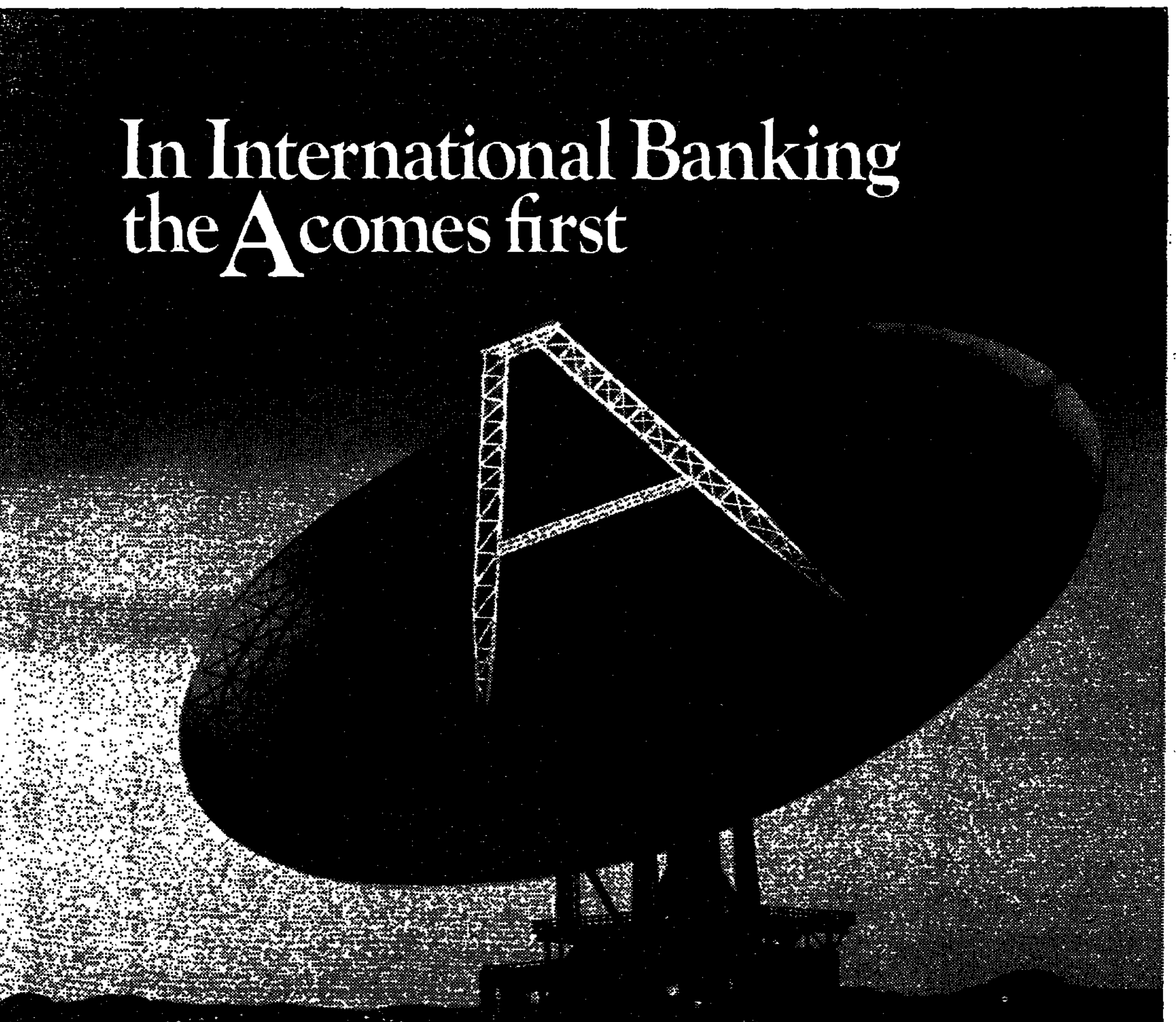
The report says that the Treasury's predicted growth of 2½ per cent for the next five years, which is higher than the projections of most independent forecasters, could not bring down unemployment as the Treasury claims.

This is because productivity increases are unlikely to fall below 2 per cent a year and the labour force is expected to continue growing by 0.4 per cent until 1988.

The report predicts an average growth of only 2 per cent to 1988. It says that GDP will grow by 2½ per cent this year compared with a Treasury forecast of 3 per cent, because earnings are rising too rapidly for Britain to maintain its share of export markets.

Mr Johnson imposed a political cycle for his predicted average growth of 2 per cent for the next five years. He says that growth will fall steadily to 1½ per cent in 1986, and the Government will react to rising inflation by raising interest rates. This would prepare the ground for expansion just before the next general election, which the report expects in 1988.

Unemployment could rise to a peak of 14½ per cent in 1988 even after allowing for a 1 per cent fall next year, because of the abolition of the national insurance surcharge, which helps to reduce labour costs. The economy may then grow at 3 per cent in 1989 and 1990.



COMPANY NOTICES

CLUBS

ART GALLERIES

CONTRACTS AND TENDERS

UK NEWS

David Fishlock, Science Editor, reports on a £450m European fusion project

Simulating the sun's energy

QUEEN ELIZABETH and President François Mitterrand of France will be present today at the formal inauguration of Jet, the Joint European Torus, at Culham near Oxford. Jet is a £450m European research collaboration to study the basic physics of thermonuclear fusion as a step towards finding a new source of electricity for the next century.

Visitors to Jet are often impressed by its heavy overhead power lines, comparable to those of the nearby Didcot coal-fired power station. They comment that Jet must contribute generously to the nation's electricity.

The scientists explain that, far from contributing electricity, their apparatus will consume about as much power as Didcot produces during the brief spells when they are running it. During such runs, they will attempt to simulate the conditions of temperature, pressure and radiation present in the sun, by injecting electrical energy into what Jet's project director, Dr Hans-Otto Wuester, calls the world's biggest magnetic bottle.

Jet is an experiment which brings together about 1,000 engineers and scientists scattered in fusion research laboratories throughout 12 European countries. They built it in five years, for about £175m, only about 8 per cent more (excluding inflation) than was estimated when the European Community's Council of Ministers approved the project in 1978.

"Why does fusion get such a good press?", was the provocative question posed by Dr C.W. Hope of the department of fuel and energy at Leeds University, in a talk in London last week. Nuclear fusion is by far the most generously funded of possible alternatives to staple methods – coal, hydro, nuclear fission – for making electricity today. The world is spending about $1bn a year on fusion research and development (R and D).

Moreover, this investment is mainly in exploring basic physics of fusion reactions, using apparatus such as Jet, and not in developing the technology and engineering of fusion power reactors.

Even after several decades of research, no one yet knows how to harness the thermonuclear reactions of an hydrogen bomb explosion in a way that will release heat slowly, safely and controllably.

Dr Hope rates the chances of eventual success – that this research will ever demonstrate the technical feasibility of fusion power – as being between 30 and 70 per cent. Should it prove unfeasible, he says, "the costs of fusion R and D will bring no economic return."

Even if fusion proves technically feasible it may be too costly to compete successfully. The competition, looking 30-40 years ahead as the earliest possible date for commercial fusion reactors, will be the fast breeder type of fission reactor.

As viewed today, fusion appears to offer such advantages as virtually limitless availability of fuel and fewer management problems, for example with radioactive wastes.

The cost of harnessing such powerful reactions safely, however, and of frequently replacing expensive reactor parts destroyed by the intense radiation, could put fusion power beyond the cost of fast reactors. Fast reactors have already been shown convincingly to work, and may yet be shown to be an effective way of consuming radioactive wastes.

Dr Hope draws the "very tentative" conclusion that "no country, however large, would be economically justified in going it alone on fusion R and D solely to supply electricity for its home market." Only if it expected to dominate the world market for fusion reactors would such a solo effort be justified.

He concludes that a collaboration in which 20 nations each contributed a 20th of the cost to secure a 20th of the benefits – should they occur – could be justified economically.

To try to avoid the risk of a self-perpetuating activity, the European Community agreed to fund only Jet's construction and a service of experiments expected to last until 1991. There is no "next project" being planned at Culham.

The next fusion experiment could well cost five times as much as Jet, the scientists say. It may be so costly that a still wider collaboration, even worldwide, may be necessary.

Adjoining Jet, linked by a bridge, is the Culham laboratory of the UK Atomic Energy Authority, one of the world's leading fusion research centres and the support laboratory for Jet.

The laboratory spends about £18m a year on fusion research. But it also earns money from the sale of its skills in high technology, for example in the design of high-power lasers, needed to extract data from the heart of an apparatus such as Jet.

The latest of Culham's commercial spin-off ventures, planned to start this spring, is an R and D club for companies for whom "struck by lightning" can spell commercial disaster.

The club – to be called the Culham lightning studies unit – will use its expertise and equipment in generating immense pulses of electricity for such machines as Jet to make artificial bolts of lightning. Such bolts can be up to 1m volts, with currents as high as 200,000 amperes. At close range the thunderclap is so loud as to be painful.

Companies likely to join the club include Westland Aircraft, for whom the increasing all-weather use of helicopters in the North Sea is posing problems in storms. The unit has a model helicopter it plans to fly through the "worst lightning environment we can imagine," in a programme designed to find better ways of protecting the aircraft.

International groups vie for satellite deal

BY MICHAEL DONNE, AEROSPACE CORRESPONDENT

TWO INTERNATIONAL groups, both headed by UK companies, have submitted bids for the International Maritime Satellite Organisation's proposed next-generation $500m (£349m) nine-satellite system, to become operational from 1988.

British Aerospace's Dynamics Group and Hughes Aircraft of the U.S., jointly head one group; the other is headed by Marconi Space System together with Ford Aerospace and Communications of the U.S. and Aerospatiale of France.

The Inmarsat system provides satellite communications for worldwide shipping and offshore industries. The system uses a U.S. Marisat satellite, the European Marecs B, and sub-systems on three satellites belonging to the International Telecommunications Satellite Organisation (Intelsat).

Because of expanding demand, Inmarsat expects to lease additional satellite capacity in the next year or so, especially on another European satellite, Marecs B-2, which is expected to be ready for service in January, 1985.

By April this year, 2,350 ships were equipped for the Inmarsat system, providing ship-to-shore, shore-to-ship and ship-to-ship communications. There are 10 land-based receiving and transmitting stations in the U.S., Japan, Norway, the UK, Kuwait, Singapore, France and Brazil, giving virtual global coverage.

Directors say technical education inadequate

BY JOAN GRAY

BRITAIN is falling behind its continental European competitors as a result of the poor image of vocational and technical education, according to the Institute of Directors.

In a submission to Sir Keith Joseph, Secretary of State for Education and Science, the institute urges major changes in Britain's education system to close the gap between education and employment. It wants to alter the balance of a system which produces a workforce in which only 30 per cent are vocationally qualified, compared to 60 per cent in West Germany.

The institute says that the world of work and schools should be brought closer together. It urges stronger links between schools, polytechnics and universities and more management disciplines introduced into education.

It wants teachers in training to spend some time in industry or commerce and qualified teachers to combine industrial or commercial experience with in-service training. It argues for a "proper balance" in pre-university education between specialised academic work and industry's needs.

The institute also urges that the polytechnics should be firmly redirected to being centres of excellence in technical subjects.

It comments that, even with high unemployment, there are shortages of skilled technicians which could be remedied if polytechnics were encouraged to run suitable courses.

Clinical trials begin soon on genetically engineered drug

BY CARLA RAPOPORT

CLINICAL TRIALS for the first widespread commercial uses in Europe of a genetically engineered drug – to speed the healing of broken bones and severe burns – are to start this year.

The trials, which will take place in Western Europe, will administer genetically engineered human growth hormone (HGH) to patients suffering long-bone fractures as well as seriously burned patients. In both cases, HGH is expected to accelerate the healing process significantly.

To date, HGH has been used only to treat pituitary dwarfism, a relatively rare disease. The two other genetically engineered products, human insulin and interferon, have yet to find widespread commercial acceptance or applications.

The new clinical trials of HGH will be carried out in Europe by KabiVitrum, the Swedish-based pharmaceutical and nutritional products company. Mr Nils-Olof Johansson, vice-president marketing of KabiVitrum, said recently: "To have abundant supplies of a hormone which causes no side-effects and which has a number of applications to diseases which have no cure, I think we are talking about a breakthrough in medical technology."

KabiVitrum developed the process to make HGH, which it will market as Somatonorm, with Genentech, the U.S. biotechnology company. Genentech is also expected to begin clinical trials on the new uses for HGH this year, but only in North America.

Under its agreement with Genentech, KabiVitrum has the rights to market Somatonorm outside North America, but will pay royalties to Genentech for using its biotechnology process in making HGH.

The results of clinical trials of the product on children with pituitary dwarfism are expected this year, according to KabiVitrum. "They are encouraging," said Mr Johansson, "The children are growing perfectly well, with no side effects." He said that product licences to market the drug for this disease are expected in Europe by early next year.

The new clinical trials on bone fractures are likely to be concentrated in Britain, a centre for this area of research. The burn studies will be concentrated in Sweden, which has extremely advanced burn treatment centres.

Mr Johanssen said that HGH would most likely be used for patients with fractures that had not healed normally, primarily those in older people. "Young people are rapid healers. We will concentrate on those patients which can benefit most from the treatment." In the case of burn treatment, the company will be initially aiming to help patients in danger of dying from their wounds.

The ability to manufacture HGH through genetic engineering was developed in the late 1970s by Genentech. KabiVitrum has been a world leader in extracting HGH from humans since 1968, but has been limited in its research in this area because of the limited availability of suitable donors. The hormone can only be removed after death. It has recently completed a new plant to make HGH in Sweden.

● The British subsidiary of Ciba-Geigy, the Swiss drug company, is appealing against a recommendation by the UK Committee on Safety of Medicines (CSM) to withdraw the anti-inflammatory drug oxyphenbutazone because of its side-effects.

The drug is commonly prescribed for the treatment of arthritis, but the CSM says that safer alternatives are available. The committee recommended last month that all oxyphenbutazone products, except for eye drop preparations, should be taken off the market.

EEC farm deal defended by Tugendhat

By Richard Mooney

BRITISH farmers were not treated unfairly in the recent cost-cutting Brussels agricultural package, Mr Christopher Tugendhat, vice-president of the EEC Commission, said at a meeting of East of England Conservatives at the weekend.

He admitted that British, West German and Dutch farmers had suffered support price cuts in their national currencies while the others had been granted increases.

"However, this line of reasoning overlooks two vital points," he said. "One is that inflation rates differ widely within the Community. In those countries in which nominal prices have risen, inflation is in general higher than in the UK.

"The other is that in Britain, Germany and Holland, farmers were getting significantly higher prices in real terms before the settlement than those received by their opposite numbers in other member states."

He claimed that even after the *settlement*, British support prices were still about 1½ per cent above the levels ruling in the majority of member states, including France, Denmark and Ireland.

Mr Tugendhat said the fact that British dairy farmers would be forced to make bigger cuts in milk production reflected their higher rate of increase in recent years.

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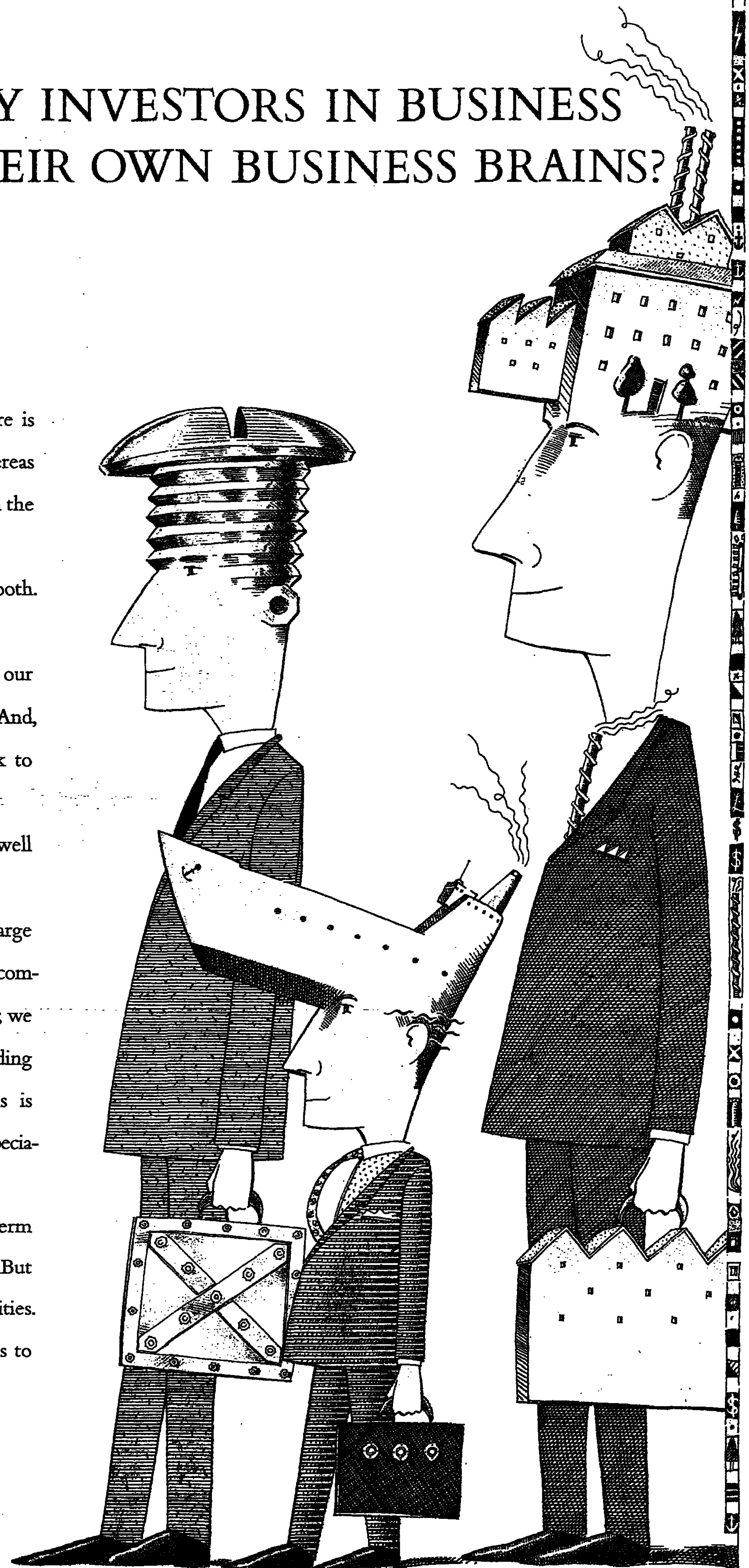

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THE MANAGEMENT PAGE

EDITED BY CHRISTOPHER LORENZ

Knocking at the door

Colina MacDougall explains how business can best lobby the European Commission

BRITISH COMPANIES have come to realise—some through painful experience—the need to speak up persuasively in Brussels and Strasbourg if they are to ensure that their interests are not bypassed. As the European parliament (based in Strasbourg) has grown in importance since 1980, it has more and more been the target of this attention.

"After key debates you can hardly fight your way through the crowd of lobbyists outside the chamber," says Derek Prag, MEP for Hertfordshire and himself a former lobbyist.

"Far more British companies go to Strasbourg now," says Peter Anderson, European specialist with the Charles Barker public relations group. "The European parliament really can take action to support an industry—for instance, it watered down the Commission's proposal for recycling drinks containers when it was approached by the drinks industry."

Lobbying is seen as a perfectly legitimate activity and there is currently no control on lobbyists or even a register of MEPs' interests, though one has been proposed. MEPs are frequently retained as consultants to interest groups.

While the parliament is commonly regarded as toothless, the fact is that since a decision by the European Court in 1980, no measure can become law unless and until its opinion on proposed legislation has been formally transmitted to the Council of Ministers. Effectively it now has the power of veto. And with an elected parliament instead of the previous appointed one, MEPs have become much more vociferous on behalf of their constituents.

However, legislation is initiated at the Commission and any company fearing for its interests would be wise to start there. "We try to consult as early as possible with the Commission to avoid real lobbying later," says Caroline Colvin, head of the CBI's European Community Department in London. "Then you need to stay tuned in, as issues can take several years to go through the mill. Even then you sometimes get taken by surprise."

"The Commission is one of the most open bureaucracies in the world," says Derek Prag. "The sooner it hears about objections, the easier it is to meet them. It really wants to hear outside views and solutions while it's drafting legislation. It's looking for help with information and statistics."

Most British companies have rejected the idea of setting up an office in Brussels as a lobbying springboard because of the *cost (£100,000 annually, at the last count by the CBI).* The exceptions are mainly the multinationals like Shell and Unilever. A surprising number of Americans and Japanese have set up listening posts there and are often to be seen among the lobbyists.

"Legislation is initiated at the Commission and any company fearing for its interests would be wise to start there"

In Britain the favoured option for the biggish company is the in-house specialist, who is often part of the public affairs department of the company and works part-time on Brussels business. Marks and Spencer, for instance, has a three-day-a-week Euro-man. "Before he started, we didn't exactly miss anything but we were always being taken by surprise at how far issues had gone," says one M and S man. "Now he's constantly going to Brussels and we're much better briefed."

An alternative approach is through the trade associations. With more or less efficiency, they represent their industry, garner information and put their views into Brussels, mainly through their Europe-wide organisations. The Commission prefers to hear from a trade association rather than a company, and indeed one senior Commission official recently told a multinational lobbying on its own account to push off.

Trade associations vary enormously in size and resources. Today many are short of funds because their finance comes *from members' subscriptions,* and numbers have declined because of the recession. Furthermore, as one expert said, "the trade association's view is likely to be the lowest common *denominator*," and this is especially true at the European level where one can speak for 10 countries.

Unlike the trade associations, the CBI has its own small office in Brussels in addition to working through the Union des Industries de la Communauté Européenne (UNICE—the umbrella organisation for national industrial bodies). It handles industry-wide problems like the restriction of noise volume in factories or the effects of the 5th Directive—the so-called Vredeling directive—which would compel worker representation on company boards. It claims success in raising the ceiling on size of companies excluded from that directive from 500 employees to 1,000.

The CBI will also advise on companies' specific difficulties. "It's taking some people in Britain a long time to catch up with the Community, especially if they don't trade with Europe," says Colvin. "They need help. Lots of our members aren't even aware that we have an office in Brussels. We try to take people over there, show them round the Commission, take them to Strasbourg, lay on lunch with suitable guests. We may be able to find the right person to solve their problem."

Private consultants provide another option, "though people tend not to call us in until the situation's really desperate," one complains ruefully. Unlike practitioners of the Westminster art, consultant specialists in European lobbying in London can still be counted on the fingers of two hands, though in Brussels there are about 200 companies which do consultancy work. Some of these have English-speaking staff.

For businesses which just want to keep in touch ("and that's 90 per cent of good lobbying," says one EEC official), some companies provide digests of the daily flood of EEC paper.

Some consultants have chalked up remarkable successes. In one case, a multimillion pound business faced extinction when the Commission wanted to ban meat tenderisers. The company tried to make representations through its European-level trade association but failed to generate support because its particular tenderising process is only used in Britain and Ireland.

Consultants then approached the Commission, but it refused to budge. However, at the committee stage the consultants managed to convince the Dutch and German members to alter "tenderisers" to "all forms of dangerous substances."

Not all lobbying works. For instance, in recent years the Brewers' Society has tried to persuade the Community to permit the old "tie" system—under which pubs buy all their goods from the breweries—to continue. But the Commission's new ruling, while allowing a version of the system, gives the pubs more freedom to purchase goods other than beer elsewhere.

British MEPs felt the brewers' case was badly presented at Strasbourg. Besides displaying a degree of heavy-handedness, one consultant felt the brewers had paid insufficient attention to MEPs of other nationalities—*a common failing among* British companies.

More important, as far as Europe was concerned, the brewers didn't have a good case. Their interests clashed with the Community's, which after all is there in part to encourage competition. On top of that, consumer organisations are strong in Brussels, and carry much weight with the Commission's directorate-general which handles consumer affairs.

But where a company has a sensible cause and makes a timely presentation, a well-run *lobbying campaign can achieve* its objective.

Cable television

Why entertainment alone will not produce the profits

BY RAYMOND SNODDY

A BLEAK, uncompromising—and unprofitable—picture of the future of cable television as an entertainment medium has been drawn by McKinsey, the management consultants.

With the first film channel to use cable already signing up its first customers and the 11 winners of new franchises now planning their networks and raising their finance, McKinsey has issued a general warning.

It maintains there is a danger that many people with the wrong managerial skills may be planning to offer the wrong sort of cable services and market them in an inappropriate way. Although new films will be a major attraction of cable TV, McKinsey believes that an entertainment-only service is never likely to achieve a positive cash flow—unless it is subsidised by a cable layer such as British Telecom.

"Total operating losses under optimistic assumptions (for a 100,000 home franchise) will reach £10m by the late 1980s and never be recouped," McKinsey concludes after a 15-month study of the prospects.

McKinsey staff with experience in banking, marketing, electronics, telecommunications and advertising were brought together for a project called DICE—Domestic Information Communication and Entertainment.

"The fact that we called it DICE probably gives a view of the degree of risk and uncertainty with which we regarded the project," says Tim Breene, one of the two McKinsey partners involved.

The aim was to look at the broad issue of the impact of digital technology on the home and at how managers should be responding to the consequences of the deregulation of broadcasting and telecommunications and the growing competition in financial services.

A lot of work had been done, McKinsey believes, on the office of the future but little on the home of the future or what home banking and shopping would mean for retailers and clearing banks. "Our purpose was to evaluate the nature and pace of the development of the home of the future and to see if it had any implications for today's business leaders or whether it was some futuristic cliche," says Breene, who has worked for both Mars and Unilever.

The DICE players believe that cable could act as a major catalyst for change—and new jobs—in British society. But it is only likely to fulfil this promise:

● If more major companies put their full financial and managerial weight behind it;

● If telephony services for both business and the domestic consumer are added to entertainment from the outset;

● If new and imaginative methods are devised to get cable into homes in the first place.

"The most significant problem facing the industry is poor management," Breene believes.

> "... the addition of telephony through Mercury Communications will dramatically change the sums. Without telephony it looks as though entertainment-only cable TV is uneconomic."

Christopher Goodall, a member of the DICE group and formerly of Rothschilds, the merchant bank, adds, "The new industry's chances of success depend on the extent to which companies are prepared to give it a whole-hearted managerial commitment as well as investment commitment.

"Those putting a whole-hearted effort into it lack the necessary experience and those who have the experience are only dipping their toes in," he believes.

The DICE team believes that the more successful the early franchises are the greater the prospects for long term success of cable. It will only take one cable channel to do badly . . .

Goodall believes that the addition of telephony services through Mercury Communications, the private sector competitor to BT, will dramatically change the sums. "Without telephony it looks to us as though the entertainment-only cable TV service is uneconomic," he says.

The DICE team believes that in a franchise area covering 100,000 homes and with an average number of businesses the telephony revenues could be £24m a year at 50 per cent cable penetration—of which the cable operators would keep around £3.5m.

Revenues from entertainment-only systems would be between £7m-£8m a year at 50 per cent penetration, McKinsey believes.

"We are talking about telephony adding 40-45 per cent to the total revenues of systems. But the incremental costs connected with offering it are not that substantial," suggests Goodall.

Instead of never breaking even on a cumulative cash flow basis, breakeven could occur in 1994, maintains Goodall, although he emphasises that precise forecasts are not possible.

The provision of telephony also has major implications for the way cable is marketed. "Instead of selling cable as more entertainment, and in effect a luxury item which is therefore discretionary, it should be possible to market cable as a communications vehicle that is much more functional, really in line with the government view of it as the basis for a whole set of interactive services," Breene argues.

The DICE group believes that U.S. methods of selling—such as with door-to-door salesmen—are unlikely to be successful in the UK. Breene believes that cable operators should adopt a cut-price policy initially to get cable television into different streets and then rely on "radiating references" between friends and neighbours to spread it.

Half price for the first year might even be justified, he believes. "This is a case where overkill in the initial years radically changes the cash flows," says Breene, though he adds that the even larger initial investment necessary would be hard for the cable companies to contemplate.

McKinsey also suspects that the plans of most cable operators to market their services in tiers of channels at different prices as is done in the U.S. may be inappropriate for the UK.

"There was a danger that after initial enthusiasm consumers might trade down to a basic minimum number of channels. Operators should think seriously of creating one single package, including all channels, for a set price.

"One of the beauties of bundling, particularly when combined with penetration pricing, is that it makes any decision to disconnect an either/or decision," maintains Breene. He believes that once cable is in a house some members of the family will like it and it will be much more difficult to decide whether to disconnect completely rather than cut out, say, just the sports channel.

McKinsey believes a national marketing organisation should be set up to carry out research to discover the most effective methods of packaging and selling cable television in the UK.

Although the risks may be great, McKinsey believes that in an era of deregulation early participation in the new market seems to be important for eventual success. McKinsey is following its own advice and taking part in the hope of helping to create a new consultancy market for itself both by encouraging participation and warning of pitfalls.

"It would only take half a dozen major companies co-operating where appropriate and then I think the industry is more likely to succeed," says Goodall.

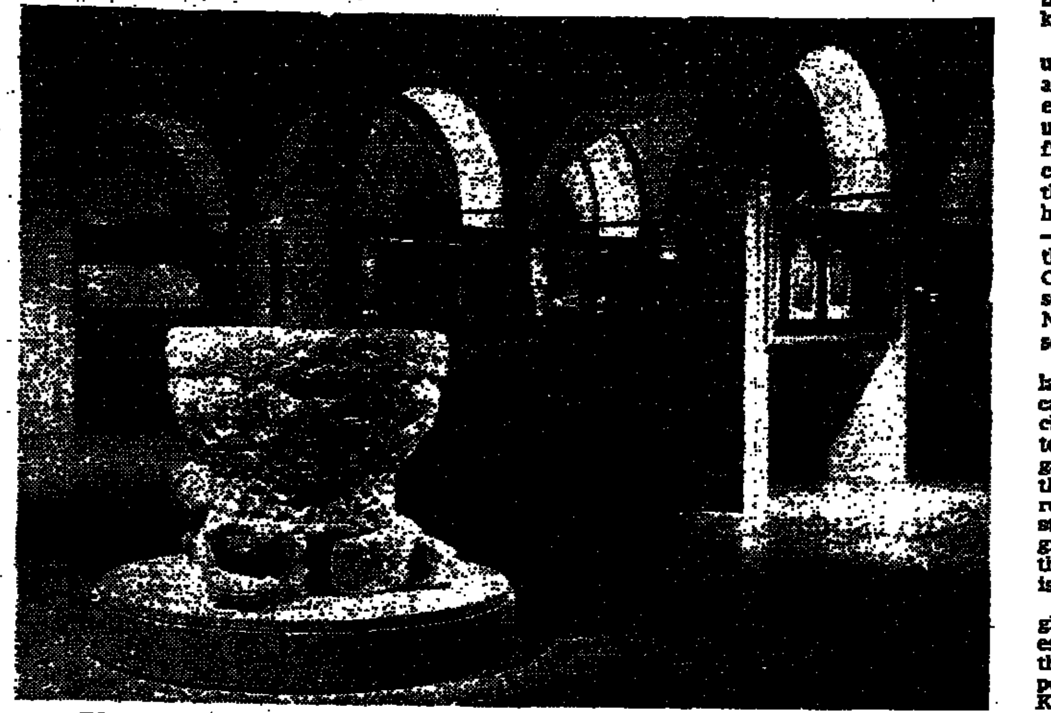
Breene gives an even more optimistic hint of the future. "We are aware of quite a number of major players who are speculatively considering whether or not cable is something they should be responding to in the short term and have not announced their intentions yet."

THE ARTS

Architecture

Colin Amery

1066 and all that



Plaited stone of the font from St Michael's, Castle Frome, circa 1140, and a glimpse of the vaulted treasury at the Hayward Gallery

Imagine a dark world. Strong solid walls give way to a massive stone womb, its darkness relieved by vivid flashes of jewel-like colour. You feel as though you are in a strong fortress built to defend you from an evil and rank kingdom struggling for justice. Inside this secure house there are glimpses of eternity, of a kingdom that is changeless and immortal.

These intense feelings of a past world are so effectively realised in the exhibition *English Romanesque Art 1066-1200* that it is possible to be transported in time and place and see the art of that period with new understanding.

This is a large exhibition that occupies the whole of the Hayward Gallery in London where it will run until July 8. It is quite magnificent in every way, and the Arts Council with its advisers, particularly Professor George Zarnecki, deserve to be crowned with laurels.

It is such a success because it is based on an important idea, not just to collect as many of the artefacts of the period and put them under one roof, but to explore the concept that the art and architecture of this country developed after the Norman Conquest as a fusion of Romanesque and Anglo-Saxon ideas and produced something quintessentially English.

To put flesh on the bones of this idea has not been an easy task. The dissolution of the monasteries and the iconoclastic activities of the Puritans destroyed vast quantities of medieval art treasures. What we have as a record of those times is fragmentary. What we have at the Hayward is as complete and comprehensive a gathering of those fragments as any of us will see in a lifetime.

Objects alone do not evoke a period, they need a framework. The designer of this glorious evocation's context is Paul Williams. He is a hero who has conquered the confoundedness of the Hayward Gallery and made the place work. He has done it by utilising the qualities of its architecture that express a solidity and magnificence of mass, and at three points in the exhibition succeeded in achieving effects in the design that are breathtaking.

On entering the gallery you face a large dark space crossed by a long arcade of rounded arches. Through the centre arch a vista opens across the concrete ramps towards a giant photograph of the solid piers of the nave of Durham Cathedral. The pilgrimage has begun.

The two other brilliant effects are a long view down a flight of steps that lures you into the third triumph, a vaulted treasury for the display of some of the most precious items. I should also mention a particularly moving experience of a quieter kind. On the top floor four stone sculptured figures face an empty lectern. Reflected in a mirror behind it are the illuminated pages of sacred manuscripts glinting with gold. For a moment the power of Faith that fired these artists lives and burns.

I felt, in the Hayward, that the organisers and the designer, faced with the difficulty of displaying fragments of stone, manuscripts, ivories, metalwork, stained glass, textiles, seals and coins—decided to assemble them in such a way that they illuminate the spread of decorative and architectural ideas from one medium to another. An ivory crosier is placed near a capital and the intricacy of the carving of one is reflected in the enlargement of the motifs in the other.

It is possible to absorb gradually and with intense pleasure the development of the decorative complexities of early Scandinavian influenced interwoven beasts and ribbons and see the cooler Continental influences pervading the kingdom.

Paul Williams has an inspired understanding of Romanesque architecture. He uses its elements in the display unobtrusively and elevates the fragments of sculpture and capitals in a way that makes them architecturally comprehensible. The exhibition design —for example the display of the stained glass from York and Canterbury — emphasises the scale of the settings that the Normans made for their smaller scale treasures.

Tall stone shafts and articulation of the grand walls of the cathedrals of Lincoln, Winchester, Durham and Gloucester can only be hinted at in a gallery. Here the triumphs of the masons, who cut the chevrons and the beasts and understood the total geometry of a gigantic cathedral long before the use of full scale drawings, is staggeringly impressive.

To fully understand the glories of the Romanesque it is essential to visit cathedrals and the smaller churches, like Kilpeck in Herefordshire and Kempley (for its wall paintings) and the Temple Church in London where the turning to the Gothic can be seen amongst the Romanesque features.

The designer has suggested the magnificence and scale of the Romanesque architecture but it has to be remembered that our picture is a partial one. Colour was a vital part of the interiors and sculptures and walls were brightly painted. The Hayward show is sober, solemn and rich. It fires the visitor to go and see the architecture for himself but it does so by, first of all, firing his artistic imagination. Do not miss this exhibition—it is an inspiring triumph.

Der Rosenkavalier/Coliseum

Max Loppert

The latest English National Opera *Rosenkavalier* is interesting as a whole. That is perhaps a pale epithet for the first Marschallin of Josephine Barstow, an opera performer guaranteed to raise things to a higher level at every new appearance. But it is, happily, not at all a one-woman show. Sally Burgess returns to Strauss duties in excellent form; Octavian is probably her best Coliseum role, for though some higher notes still expose an occasional rawness, Miss Burgess's warm middle voice, her gift of quick, accurate, passionate characterisation, and her beautiful way of shaping English words join to fulfil almost all of the role's requirements to admiration.

The new Sophie, Anne Dawson, who came to notice at the Royal Northern College (and more recently on the records of Boughton's *Immortal Hour*), takes here a first big leap toward future stardom. This was Straussian ravishment of authentic kind—the silvery high soprano floated out at ease in long legato phrases dewy with wonderment, the top lines of duet and trio refreshed with that special artlessness that is full of concealed artistry. Miss Dawson is no spun-sugar morsel, though; a fullness of tone at the lower end, where the figurine Sophies tend to evaporate, and a suggestion in her bearing of a formidable matron in the offing, are two of the performance's individual attractions.

For the revival, indeed, the company has assembled one of the most remarkable female trios in the production's lifespan, a trio assorted with a skill that affords the opera's velvet-contoured lengths fresh gleams of vitality. Miss Barstow was the show's first Octavian (in 1975); she graduates to its senior role with her mastery of "body language" intact, her intuition for limning the shape and divining the soul of each new character. It is a reading of the role at the opposite pole from such dignified, ample Eno Marschallins as Ava June and Lois McDonall; fears, resentments, memories gay and sad, and sudden prophetic intimations light its course with volatile flashes of dramatic colour. (I've never before believed so fully in the Marschallin's midnight stopping of clocks.)

What it seemed to lack, on Saturday, was the relaxation of style and sound that should ideally balance it. Miss Barstow has proved in previous Strauss assignments, Arabella most notably, that her idiosyncratic, wonderfully versatile soprano can accomplish the vocal writing at a lesser rate of tension than was evident in the opening stages of Act 1; later, the singing began to acquire much of needed light and shade, the ability to glance points off words, and in the opera's final scenes Miss Barstow was already superbly grand, alike in vocal and in physical bearing. In this performance the trio was not just a swoon of luscious sound: it made real, and climactic, sense.

Any *Rosenkavalier* with this much in its favour is worth visiting. But there are also weaknesses that deny the whole the level of its best pars. Dennis Wicks is the Ochs — long familiar, expert in routine, but now rather sere and savourless. In Keith Warner's not quite complete rehearsal of the John Copley production, much of the comedy has lost its precision of touch — Italian tenor, inn servants, and Ochs' retinue are all examples of blunted aim (but Stuart Kale's Valzacchi, Anne-Marie Owens' Annina, and Malcolm Rivers' police commissioner are very good). The occasion marks the ENO debut of the Viennese conductor Friedrich Pleyer, whose account of the score was musically in its most sympathetic passages, and rather lacklustre in others; he, like Mr Warner, seems to have needed more rehearsal time.

Romeo and Juliet/Covent Garden

Clement Crisp

Romeo and Juliet has returned to the Opera House repertory this season with some apparent refurbishing of costumes for the principals and I would hazard, some revised lighting: the dark scenes appear darker, and Juliet on her bier is now caught in a blazing shaft of light as if the Capulet vault were getting ready for the pantomime season.

On Saturday afternoon, when Fiona Chadwick made her debut as Juliet, the score under Elgar Howarth had some fine moments of dramatic tension and freshened orchestral balance — not since Yury Ahronovich's electrifying performances a few years ago has Prokofiev's emotional purpose seemed so clear — but the danced interpretations reflected this only intermittently.

Miss Chadwick, with her pure, strong dancing — lovely in its security as in its clarity — sails through the role's demands, attractively a young girl in the opening scenes, and distractedly a young women trapped by her own wilfulness in the third act. She is touching, delicate in Juliet's uncertainties at the ball as she stands with Paris (Michael Crookes, new to the role) and tries to reconcile good manners with her sudden obsession for Romeo, and in the latter part of the bedroom duet, with caution flung to the winds, Juliet's physical passion for Romeo spoke with authentic MacMillan fervour.

Elsewhere the character is, as yet, only sketched, and though Julian Hosking is a fine partner and a handsome Romeo, he, too, seems to bank down the fires of the drama.

What is essential, and so often missing in performance today, is that headlong, incandescent, all-for-love tempestuousness with which Seymour and Gable first imbued every moment. *Romeo and Juliet* is in danger of becoming a "classic" to be performed with the decorum and deadly rectitude of *Swan Lake*.

The secondary roles have a routine air (Stephen Sherriff's Benvolio a brightly danced, brightly felt exception), while the stabbing of Paris in the tomb, lightning fast on Saturday, went for absolutely nothing. There is a Houston Rogers photograph in the programme of the staging as it was in its opening season in 1965, which recalls its original intensity as Desmond Doyle's Tybalt (arrogant menace incarnate) killed David Blair's ebullient Mercutio. After two decades we may perhaps not expect that first fine careless rapture, but if *Romeo* is to retain its importance in the repertory it needs far bolder, braver playing than it received on Saturday.

On the Freudian slopes of Eugene O'Neill

London marathons: **Michael Coveney** reviews Strange Interlude at the Duke of York's while **Martin Hoyle** spends a Long Day's Journey Into Night at the Arts

Alastair Muir

Glenda Jackson

When O'Neill's *Strange Interlude* was produced in 1928 by the Theatre Guild in New York, the playwright's great champion George Jean Nathan pronounced it his finest work. A 1963 Actors Studio revival found intellectual critics dubbing it the worst play ever written by a major dramatist. The drama is in nine acts and plays at the Duke of York's for five hours with two intervals.

You simply must not miss it. Not because the play is a masterpiece (it is not), nor because of its curiosity value as the piece of stage fiction that did most to popularise Freud in America, nor because it was the most celebrated play of the 1920s, nor merely because Alexander Woolcott lost a job on Vanity Fair by denouncing it before it had opened.

You must see this production for the performance at its centre by Glenda Jackson as Nina Leeds (what a name!), the daughter of a New England professor who loses her lover in the First War and surrounds herself with a collection of unsatisfactory substitutes in pursuit of both self-fulfilment and a maternal role. But above all you must see this production for its all-round excellence of acting and design, and for the tactful ingenuity deployed in solving one of the most fascinating problems in the modern theatre.

On'Neill had been experimenting bravely throughout the 1920s, with tom-toms and Expressionistic techniques, with masks, with rhythms and manners of speech. In *Strange Interlude* he investigates the plausibility of energising the interior monologue, of showing a character at the split moment of ambiguity between saying what is felt and saying what is, in fact, heard. Nina, we are told, has seen the lies behind the sounds called words.

Where O'Neill's rather laboured technique might have proved an insuperable obstacle, the director Keith Hack and his cast turn it to positive advantage, eliding the inner and outer thougts, as it were, in a distinct style of presentation. Here is no whispering behind hands or confidential downstage shuffling of feet. The play is treated corporately, musically, beautifully, sensitively.

In the case of Edward Petherbridge as the loyal Charles Marden, a grown-up mother's boy who adores Nina, the style, which appears at first to cast him as our narrative guide, unravels to suit him utterly. The studied artifice of considered wisdom is both his metier and his doom. The elegant cadaverousness of this portrait will surely mark it as one of Mr Petherbridge's very finest.

So what happens? Nina marries a dullard in order to have the child she owes the dead lover. When pregnant she is told by her mother-in-law (a spectral, *fascinating* cameo from Sheila Burrell) that there is insanity in the family. Nina has an abortion. She has a child by the doctor who fixed her marriage and passes off that son — named Gordon after the War hero — as her husband's. O'Neill starts the play in a world he knew and finishes it in one he imagined, with little Gordon flying off in an aeroplane from Long Island in 1945. What, no Second War?

Mr Hack and his director, Voytek (assisted by Michael Levine), place this epic in a high, square, white clapboard box. There is a solid library, which flies off to fix the characters in a mythic void of Americana, like figures in a Hopper painting. In the middle section, Nina, her husband and Charles the best friend are pinioned in three wonderful period armchairs. With the leap in time, Miss Jackson is transformed with a mauve turban and dark glasses into a likeness of Ava Gardner, and the rather strange, brittle quality of O'Neill's imagined milieu as young Gordon takes part in a Long Island boat race, is given full surreal rein, with bunting and blazers and ugly raucous cheering which culminates in Nina's husband's (James Hazeldine) eventually fatal stroke.

Miss Jackson's performance is one of her greatest, emotionally and intellectually fascinating. With Brian Cox as the doctor, she breaks through the objective soliloquy device—as much each character's invention as the playwright's—to acknowledge her passion. I must give an inadequate nod towards Mr Cox: he has done nothing better than this for ages. This is, in short, the most fascinating, unusual and remarkable show in London.

*

At the Arts 24-year-old Ludovica Villar-Hauser's production of *Long Day's Journey into Night* is a labour of love. A convincing family feeling permeates the bristling, snarling and occasional savaging of the eternally interlocked foursome, so closely bound that any individual attempt to escape can only bruise the others. O'Neill's love, resentfulness and guilt are captured in these shifting alliances, uneasy truces and groping reconciliations.

The lightweight cast sometimes uses too loose a rein on this unwieldy play; it can rear into melodrama or buck its rider into bathos. Darlene Johnson's gracious and laughing Mary, for instance, eyes occasionally clouded by worry, initially depicts both mother and well-bred faded beauty perfectly, her vivacity turning chillingly to empty prattle. Elsewhere her distracted brightness recalls Jessica in *Soap*. For once we feel for her husband, chafed by that gently reproachful foregiveness, each sweetly smiling concession flicking a barbed tail.

O'Neill's clumpingly casual throwaways, carefully feeding us information, tempt Miss Johnson to play for laughs — dangerously, for audience mirth at lines like "Yes, you were continually having nightmares" steers us close to Charles Addams comic Gothic.

Faintly resembling Edgar Allan Poe (a bedraggled hairstyle reflects little credit on Keith of Smiles), Sean Mathias intelligently uses lightness of touch to show how quick bright things come to confusion. The bitter observation on his dope-fiend mother evokes no laughter: an achievement in the circumstances.

The matinée idol's "famous beautiful voice" has frogged; but Trevor Martin's James convinces as the self-made man whose near-pathological fear of poverty explains his monstrous meanness; and the last act's revelatory monologues find Mr Martin at his best.

Michael Deacon suffers from the late placing of Jamie's drunk scene in an undisguisably long act, but his thoughtful approach succeeds even with those elements of the part that have become dramatic clichés. The perfunctory gentility of— only just—well-to-do temporary accommodation is accurately caught by Jane Cameron's set.

ECO/Elizabeth Hall

David Murray

Conducted by Michael Tilson Thomas, the English Chamber Orchestra was in particularly bright — even nervy — form on Friday for Mozart and Ravel. The manic note extended beyond the works chosen for the guest virtuoso Konstanty Kulka, Mozart's K. 218 Violin Concerto in D and Ravel's *Tzigane*, which in their different ways demand plenty of aggressive brio; even the purely orchestral pieces fairly crackled. Mr Tilson Thomas likes intensity in his music, and draws it out with urgent gestures. The results were immediately compelling: in the 34th Symphony of Mozart, the taut panache of the opening Allegro vivace was something quite out of the ordinary, though it sounded entirely right.

Mr Kulka could not have wanted more alert accompaniment in the Mozart Concerto (he might even have liked something tamer). He delivered the solo part with silvery tone and the proper elegance, as well as the frank relish for the spotlight which is part of the dramatic plan. In *Tzigane* not every fearful hurdle was taken with equal success—some harmonics had to be taken on trust; but Kulka carried the thing off with confidence, and a fine sneer, and shamelessly bold *rubato* in the pastiche rhetoric. For getting a hair-raising *accelerando* underway, it's conventional in this piece to rely upon *sul ponticello* playing (with bow very near the bridge, making a corrosive snarl): Kulka found instead a specially dark, throaty tone, musically very apt. He is one of the liveliest violinists about, and we should borrow him from the Poles more often.

Tilson Thomas gave us *Ravel's Ma mère l'oye* in the "complete ballet" version: that's to say, with the orchestrated versions of the five original and perfect piano duets prefaced by a prelude and a "Danse du rouet" (to lead up to the pricking of the ballet Princess's finger), and with new linking fillers between them. None of that improves the original Suite, but since Ravel's least sketches for orchestra are worth hearing it deserves occasional performance. There were untidy moments, but piercing sympathy too. The closing "Jardin féerique" is a test for sincere Ravellians; Tilson belongs to that order, for he made it as measured, candid and moving as one could wish.

Sir Geraint's goodbye

Sir Geraint Evans will give his farewell performances at Covent Garden as Dulcamara in Donizetti's *L'elisir d'amore* in the production originally mounted for him by The Royal Opera in 1975.

Performances take place on May 15, 18, 23, 26, 29, 31 and finally, on June 4 which will be a gala farewell performance in the presence of the Prince of Wales. The evening is being sponsored by HTV Ltd.

After singing in *L'elisir d'amore*, Sir Geraint will give the last performances of his career with The Royal Opera at the Olympic Arts Festival in Los Angeles, where he will sing Captain Balstrode in three performances of Britten's *Peter Grimes* on July 11, 16 and 19.

Arts Guide

Music/Monday. Opera and Ballet/Tuesday. Theatre/Wednesday. Exhibitions/Thursday. A selective guide to all the Arts appears each Friday.

Music

April 6–12

PARIS

Katia Ricciarelli recital, Marcello Guerrini piano: Verdi, Bellini, Schubert, Fauré, Negro Spirituals. (Mon) Théâtre de L'Athenée (742 8727)

Montreal's Symphony Orchestra conducted by Charles Dutoit: Berlioz, Stravinsky. (Mon) Théâtre des Champs Elysées (723 4777)

English Chamber Orchestra conducted by Raymond Leppard, Emanuel Ax, piano: Mozart, Schubert. (Mon) Salle Pleyel. (561 0630)

TOKYO

Tokyo New Philharmonic Symphony Orchestra, conductor Seiji Ozawa: Beethoven, Stravinsky. Tokyo Bunka Kaikan. (Mon) (828 2111)

WEST GERMANY

Berlin Opera: a lieder recital with James King, piano Eberhard Adler: Peri, Schubert, Wagner, Strauss (Tue)

Frankfurt, Alte Oper: gala concert with the Frankfurt Opera Orchestra, conducted by Michael Gielen with soloists Edith Mathis and Homero Francesch: Mozart, Haydn, Schumann, Liszt, Beethoven (Mon). Rudolf Buchbinder, piano: Beethoven (Tue)

LONDON

Scottish National Orchestra, conductor Sir Alexander Gibson, Ivo Pogorelich piano: Weber, Chopin, Rachmaninov. Royal Festival Hall (Mon) (928 3191)

Royal Philharmonic Orchestra, conductor Moshe Atzmon, Cristina Ortiz piano: Rossini, Handel, Rachmaninov, Dvorak. Barbican Hall (Mon) (638 8891)

Bournemouth Symphony Orchestra, conductor Rudolf Barshai, Yefim Bronfman piano: Brahms programme. Barbican Hall (Tue)

London Symphony Orchestra, conductor Claudio Abbado, Shlomo Mintz, violin: Beethoven programme. Royal Festival Hall (Tue)

London Sinfonietta and Voices, conductor Lothar Zagrosek: first performance of Lloyd's Mass for six voices and first British performance of an Ulrich Stranz work in an otherwise Kurt Weill programme. Queen Elizabeth Hall (Tue) (928 3191)

VIENNA

Tango Festival at Konzerthaus on Monday. (72 1211)

Lieder and Arias: Michelle Berger, mezzosoprano, Roberta Cunningham, soprano, Lucetta Marty, piano: Mozart, Brahms, Richard Strauss. Konzerthaus Schubertsaal. (Mon) (72 1211)

Vienna Symphony Orchestra: conducted by Gary Bertini with Dmitri Sitkovetsky, violin: Mozart, Mahler. Musikverein (Wed, Thur) (658 190)

ITALY

Rome: Sibelius Violin Concerto in D minor (Violinist Silvia Markovici) and Brahms Symphony No 2 – conducted by Gianluigi Gelmetti (Sun, Mon, Tues): Auditorio di via della Conciliazione. Teatro Olimpico (Accademia Filarmonica Romana) Piazza Gentile da Fabbriano: pianist Alessandro de Luca playing Brahms, Schumann and Bartok. (Wed) (393 304)

NEW YORK

New York Philharmonic (Avery Fisher Hall): Zubin Mehta conducting, Brigitte Engerer, piano: Haydn, Boulez, Tchaikovsky (Tue); Zubin Mehta conducting, Lorne Munroe, cello: Carter, Bloch, Tchaikovsky (Thur). Lincoln Center (874 2424)

Carnegie Hall: Randall Hodgkinson, piano: Beethoven, Copeland, Perle, Chopin, J. Strauss (Tue); Ivo Pogorelich, piano: Bach, Chopin, Prokofiev (Thur) (247 7459)

Merkin Hall (Goodman House): Abel Carlevaro, guitar recital: Villa Lobos, Torroba (Mon); Berenice Bramson, soprano recital: Britten, Wolf, Rachmaninov, Weill, Bramson (Tue). 67th W. of Broadway (362 8719)

WASHINGTON

National Symphony (Concert Hall): Leonard Slatkin conducting, Yo-Yo Ma, cello: Rouse, Elgar, Franck (Tue, Wed, Thur). Kennedy Center (254 3776)

CHICAGO

Chicago Symphony (Orchestra Hall): Sir George Solti conducting, Eunice Lee, violin: Berlioz Paganini, Chaikovsky (Thur). (435 8122)

Jenufa/Birmingham Hippodrome

Andrew Clements

The Janacek cycle shared between Welsh National and Scottish Operas, began in 1975 with *Jenufa*, produced by David Pountney. WNO revived it in Cardiff last month and as usual has been quick to take it on tour, reaching Birmingham on Wednesday, conducted by Richard Armstrong.

This is anything but a routine revival. The cast is entirely new, and Pountney has taken the opportunity to revise his approach in several crucial aspects. No doubt he was partly influenced in this by the decision to use the original version of the score as prepared by Charles Mackerras for his recent recording. These are the first stage performances in which Janacek's intentions have been followed faithfully: previously opera companies have had to rely upon the edition of *Jenufa* prepared in 1916 by the conductor Karel Kovarovic which "improved" the composer's orchestration, made many minor cuts to tighten the action and provided an ending more conventionally theatrical than the original bald, downbeat close.

As anyone who has heard the Decca records would expect, the experience of hearing all the excisions opened out, the orchestral sound purged of its late romantic veneer and returned to pungent muscularity would be ample justification alone for the enterprise. But WNO have gone much further and produced a quite spell-binding piece of theatre, pivoted about Phyllis Cannan's Kostelnicka and Helen Field's Jenufa, and underpinned by Mr Armstrong's utterly surefooted and idiomatic handling of the score.

In the new scheme of things the role of the step mother has been most radically revised. Her aria of self explanation and justification which cuts through the dancing in the first act has been restored (though Janacek himself had dropped it from his final version) more than compensating for its dramatic awkwardness by the rounded depth of character it affords to the rest of the opera. Miss Cannan is now able to bring Kostelnicka to believable life, avoiding shrewish caricature and presenting her as a woman deeply scarred by an unhappy marriage, ready to move heaven and earth to prevent her foster daughter going the same way. She is still able to generate a fierce climax in the second act but now carries an undertow of sympathy with it. Some of her lines in the English translation lie awkwardly across Janacek's phrases, and Miss Cannan manages them with great adroitness and dramatic point.

Miss Field has the priceless ability to make dramatic points with the merest physical inflection; her stage presence is quite magnetic. Her transformation from the lithe, physical optimism in the first act to statuesque austerity and resignation in the third is marvellously managed, leaving in her final duet with Laca a tantilising ambiguity that chimes perfectly with the understatement of the closing music. Every one of her words is perfectly audible, for she has the power to ride over the roughest orchestral textures. It is a thrilling portrayal, of endless fascination.

Around these strong portraits is assembled a finely drilled cast: a gauche, impetuous Laca from Paul Streathern (a late replacement) a flamboyant, callous Steva from Arthur Davies, a sombre Foreman from David Gwynne. As the grandmother Menai Davies is a perfectly judged analogue to Kostelnicka; there is a finely observed pair of cameos from Kenneth Pugh and Anne Morgan as the Mayor and his wife. Mr Armstrong drives his orchestral players hard, but they respond with great reserves of tonal power. In all, a memorable evening.

Songs from the Front/Warehouse

Martin Hoyle

Considering the show started a quarter of an hour later than advertised, aggressiveness might have been understandable in the audience rather than on the face of the star as she finally strode forward to address her public. Add a technical hitch that prolonged the interval, and the ratio of waiting-time to music began to recall an even more august institution in the Covent Garden area; though in fairness Elaine Loudon is generous with her encores.

With her broad-faced, round-cheeked vivacity she looks like a radicalised Katie Boyle. Backed by three able musicians on various permutations of flute, saxophone, percussion and keyboards, her singing ranges from thinnish if distinct soubrette through full-throated balladry to her most effective weapon, punchy and pointed speech. Ms Loudon's songs are all to varying degrees politically committed, concerned much with racialism and the arms race.

Her opening number draws parallels between sexuality and military armament. I took its forlorn, mutually-comforting couple to symbolise President Reagan and Mrs Thatcher, but hastily abandoned the idea in view of their subsequent activities. A restrained song about a bright and busy day suddenly ended by silver missiles in the sky finds her at her strongest, beautifully backed by Andy Saunders's flickering flute accompaniment.

Mr Saunder's setting of Brecht's poem, "Easter Sunday, 1935" is highly attractive and lays the spectre of Weill with a gentler, haunting lyricism. Other songs are less successful.

To my inexpert ear, Mr Saunders, Richard Wolfson and David Adams were an excellent band. No authors are credited in the slip that does duty for a programme. If the Donmar management want (I know they do) to be treated as a West End theatre they should start with the basics.

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Thatcher's Irish test

THE REPORT of the New Ireland Forum—giving the views of the main Irish political parties on the future relationships between London and Dublin and between the republic and Ulster—is due to be published this week. Whatever the report says, there can be no doubt that the next move lies with Britain.

The British Government indeed is facing a fundamental choice—whether to continue a policy that has achieved at best containment over the years and promises nothing better for the future, or whether to reassess the policy completely. The report of the forum should provide an opportunity for the latter.

Preliminary leaks suggest that the report will contain a note of realism: a recognition that the economy of the South is no longer booming and that that of the North is decaying. There can be no question of the republic taking on Britain's role of economic life-line to Ulster even if that were politically feasible, which it is not. It is also suggested that the southern politicians, as well as those of the mainly Catholic Social Democratic and Labour Party in the North, have concluded, however reluctantly, that unification is out for the foreseeable future.

If so, that is a welcome development and it should form the basis on which British policy can be reviewed.

Passivity

For the last decade, policy has consisted of seeking to contain the violence and enhance security, the occasional attempt at restoring some form of devolved government and the odd summit meeting with Dublin. It has got nowhere. Meanwhile, the Provisional IRA has advanced to the point where it has become a potent political as well as military force, contesting elections as well as planting bombs. It has become more of a threat to the stability of the South than it ever was to Britain.

Policy has also been conducted with a passivity bordering on carelessness. At no stage has the Irish question been at the top of the British political agenda. That has to change.

There should be two starting points once the forum report is published. The first is that there can be no question of British withdrawal from Ulster until something resembling peaceful conditions is restored. The second is that that point must be fully accepted by the leading political parties in the republic and their leaders.

The reason is that there can be no chance of substantially improving relations between North and South until there is first an improvement in relations between the two communities in the North. It is in the interests of the republic to acknowledge that fact. It means yet more co-operation with the British on security. It means encouraging the SDLP to take its place in the Northern Ireland Assembly so that there can be some possibility of devolved government. Above all, it means a public commitment by Britain and Ireland to work together to resolve present problems. Future problems, such as the relationship between North and South, can be dealt with only when the North is at peace.

Unification

For the Irish politicians that will involve firmly turning their backs on the IRA and an abandonment of that policy of silent complicity with its activities which is so often close to the surface of Irish politics. It will mean admitting that unification is at best a hope for the future rather than a present aspiration.

There are tasks for the British too. Security policy has not always seemed as even-handed as it might be. It is necessary to stand up to the thugs among the Loyalists as well as the IRA. It may be necessary to call the bluff of some of the more extreme Loyalist politicians who talk nonchalantly about an independent Ulster and days of action. The Conservative Party will have to be ready to take on Mr Enoch Powell and some of the Loyalists in its own ranks who constantly snipe at Mr James Prior, the Secretary of State. The aim must be to be seen to be offering a fair deal to the minority community.

Yet, perhaps the biggest test of all lies at home. Is the Prime Minister willing to take it on? Mr Prior would be normally coming to the end of his time, given the mental and physical strain that his job involves. He remains the best man for the task, though Mr Michael Heseltine would be a possibility. Whoever is Secretary of State, however, can only move on to new policies if the Prime Minister is fully behind him.

Mrs Thatcher has to decide in the next few weeks whether to make the Irish question a priority and to attach her personal authority to the search for a solution. She could do it. She could do it magnificently. It would be a tragedy if she were to walk away.

Patent licensing and competition

OF ALL the countries forming the European Community, the UK probably has most to lose by a legal regime hostile to the commercialisation of innovation and industrial developments by means of patent licensing. The export of British know-how makes an important contribution to the country's invisible earnings. Unfortunately, the competition rules of the Community, or more precisely their application by the European Commission, are inspired by a fear that every form of co-operation is potentially anti-competitive. Almost every licensing agreement of some importance is caught by the mesh of the EEC competition rules and has to be notified to the Commission with a request for clearance or exemption.

As none of the other member countries matches British involvement in the export of technology, the Commission was unprepared for the avalanche of notifications which descended on Brussels after the UK's accession. Twelve years later, it is still unable to cope with a backlog of some 3,000 notifications. A regulation which would exempt all licensing agreements satisfying certain specified conditions was the obvious solution from the beginning. The Commission drafted one in 1976, but it did not meet the needs of industry and was widely regarded as inadequate. The British Government declared that the regulation would make things even worse, and blocked the project.

Unrealistic

However, the Commission has never given up the idea completely and the draft which it has now produced—but not yet officially published—is an improvement. It has dropped the most objectionable conditions which would have limited the exemption in territories with fewer than 100m inhabitants to five years at the most and excluded from their benefit companies belonging to groups with an annual turnover of more than £550m. The new proposal seems to provide a good basis for legislation provided that the drafters are willing to listen and make a few more adjustments necessitated by the realities of business.

It is unrealistic to insist, as the Commission does, that royalties on know-how licensed in connection with a patent must not be required after the patent has expired or has been invalidated. This would remove any incentive to license patents which only have a short time to live, or which can only be defended by the patent owner by the expenditure of vast amounts of money. The second weakness of the proposal is that it does not allow for protection against parallel imports in the initial period—say five years—during which the licensee tries to establish production and break even. The need for this is not only pleaded by businessmen but is also recognised by judges in competition disputes.

Escape clause

The Commission offers an accelerated procedure for dealing within six months with notifications of licensing agreements which, although not satisfying the conditions of the block exemption completely, come near to it. Such vagueness is bound to lead to confusion, and there seems to be no reason why the Commission should not apply the accelerated procedure to all notified licensing agreements.

It should also remove the threat of invalidation of the exemption by a simple refusal to supply within the licensee's territory and by cross-licensing, which is often the only possible solution of patent disputes. The value of the draft is also much reduced by its general escape clause which would enable the Commission to withdraw the benefit of the block exemption whenever it thinks that an agreement, though satisfying the requirements of the regulation, has "effects which are incompatible with the EEC competition rules." In short, the Commission, which always asks industry to trust it, should also show a minimum of trust to industry.

Stock Exchange relaxes overseas trading rules

The fight to win back foreign business

John Moore, City Correspondent, reports on today's important move in reshaping the London markets: the launch of international dealerships

Roger Taylor

The dealing room at Akroyd & Smithers

A NEW PHASE begins today in the London securities market as the outlines of what life could be like in the future for British stockbroking and market-making firms take shape. This morning London securities firms take the first steps in developing structures which will allow them to compete internationally with powerful overseas rivals.

Some of London's largest stockbroking firms and influential market makers or stock-jobbers are starting the operation of new international dealing companies as tight controls on trading in overseas securities imposed by the Stock Exchange on the market's firms are relaxed.

At the same time commissions on transactions carried out on deals in overseas securities will no longer be fixed in relation to a minimum commission scale imposed by the Stock Exchange. This could offer better deals to the large investor.

Until now, institutions have found trading overseas through British securities firms extremely cumbersome. Big American investment houses and Japanese securities firms with integrated services have been able to offer a faster and more efficient service. Today's reforms are designed to redress the balance in favour of the UK brokers and jobbers—but the changes are only a first step towards putting them on an equal footing.

These changes coincide with a major upheaval in the London stock market brought about by an agreement last summer between Sir Nicholas Goodison, the Stock Exchange chairman and Mr Cecil Parkinson, then Trade and Industry Secretary.

The Stock Exchange agreed to implement reforms which would allow greater participation by outsiders in its regulation and the dismantling of its minimum scales of commissions on securities transactions by the end of 1986. In return, the Government agreed to exempt the Stock Exchange from the effects of restrictive practices legislation. Protracted litigation between the Stock Exchange and the Office of Fair Trading was brought to a halt.

The agreement will mean a much more competitive environment in the London market

Impetus from relaxation of exchange controls

with greatly increased participation by foreign financial groups.

However, the plans for international dealerships were under consideration before the momentous developments of last summer.

In the early 1970s it was recognised that Stock Exchange firms needed a set of rules which allowed them to take more advantage of foreign business, which was drifting away from London firms to international securities houses with London offices, which offered a more flexible service. The debate gained fresh impetus once exchange controls were relaxed in 1979.

This produced a sharp rise in institutional interest in investing overseas. In 1978 institutional investment in British equities stood at £1.92bn and investment in overseas equities at £459m. By 1982 institutional investment overseas had climbed to £2.92bn compared with its investments in UK equities of £2.47bn.

"All of that overseas investment was being directed straight into the hands of the likes of Merrill Lynch, where the research, local knowledge, and flexibility to deal, gave them the edge," said one Stock Exchange official. This concentrated the Stock Exchange's collective mind.

The rules for dealing in international securities have been relaxed gradually by the Stock Exchange in the past few years, but until now the way in which brokers and jobbers could transact large amounts of business in overseas securities was through rule 60 of the Stock Exchange.

Under this rule, the Stock Exchange permitted companies to be created by its member firms which could then compete on equal terms with local securities firms in overseas markets. The rule 60 company is a member of a foreign stock exchange or trading association—*not the London one*—and follows the rules of those bodies.

The rule 60 broker company is allowed to act as both principal and agent in the overseas market when acting for a foreign client. But when acting for a British one, he can only act as agent, passing on orders to other market makers. The present system also means that London jobbers cannot have direct access to institutional clients wishing to trade in overseas shares.

The new system changes much of this. Firstly, the international dealerships will be members of the London stock market.

Secondly, British stockbrokers will be allowed to act as principals and jobbers will have the freedom to deal not just with members of overseas stock exchanges but with the ultimate customer for a foreign stock. This will ensure a more flexible service.

However, the Stock Exchange has baulked at a total liberalisation of the system, which would involve breaking down the present barriers in London between principals, who are able to take on stocks on their books, and agents (or brokers) acting for clients. International dealers will not be able to play both roles, as their competitors do.

The fusion of both the role of principal and agency work—known as "dual capacity"—bothered the Stock Exchange as it feared that potential conflicts of interest would be created. Since then, however, the Stock Exchange has become resigned to the fact that the separation of the two functions—known as single capacity—cannot be maintained in the more commercial environment it faces as a result of reform.

As a result, a considerable lobby is now building up among members to allow the international dealerships to act as both principal and agent. "It is important for an international dealer to operate in a dual capacity way and compete with rivals. I hope that the council will see that it is not necessary now to maintain single capacity," said Mr Stephen Raven of Akroyd and Smithers, one of the leading London stock jobbers.

International dealing companies are incorporated with limited liability as subsidiaries of member firms. A minimum capital of £500,000 is required and non-Stock Exchange members can hold up to 49 per cent of the shares.

Among those firms which have set up or announced intentions to start international dealerships are Cazenove, Hoare Govett, Grieveson Grant, Williams de Broe Hill Chaplin, Quilter Goodison, Bisgood Bishop, Smith Bros, Kitcat and Aitken and W. Greenwell.

Some firms are going through the motions of forming an international dealing mechanism without any conviction that it will serve much purpose.

"The trouble is that now it is recognised that dual capacity has got to come, and the British securities industry has to become fully integrated in the services that it offers, the whole thing is an irrelevancy. It is nothing more than a public relations stunt," a stockbroker remarked sourly.

"I think the international dealerships have a limited life in their present concept," observed Mr Raven of Akroyd & Smithers. "You have to remember that the dealerships began to come on stream before we had any idea that we would be exempt from the restrictive practices legislation."

Even so, a significant number of firms are determined to exploit the present opportunities. "You cannot afford not to be doing what the Stock Exchange is doing" remarked the broker at Grieveson Grant responsible for running his firm's international dealing operations.

Hoare Govett said: "When international dealing subsidiaries were thought of it was believed that none of the major firms would form subsidiaries because they already had off-shore subsidiaries.

In spite of that initial reaction, the firm says: "It is essential to take advantage of international dealership in London which will lead to dual capacity. It will prove an ideal nursery for learning the dual capacity system and methods."

Hoare Govett is forming its international dealership without the direct participation of Security Pacific, the U.S. bank, which has a 29.9 per cent stake in the brokers. The subsidiary will be 100 per cent owned by Hoare Govett.

Cazenove, with a reputation as the City's most aristocratic broker, raised its profile recently with the announcement of an international dealership but again without any outside involvement. "We do value our independence. If we did bring anyone into the international dealership it would compromise our independence and freedom of action in the future. We could see positive conflicts of interest if there were outside involvement," observed senior partner Mr John Kemp-Welch recently.

Like other firms starting out in a modest way in the first instance, Cazenove is to concentrate on linking up buyers of overseas securities and sellers in matched deals, a route which requires limited capital compared with a market making role.

At Akroyd & Smithers, the stockjobber, the plans are more ambitious. Mercury Securities, the parent company of merchant bank, S. G. Warburg, has taken a 29.9 per cent stake in Akroyd, and Akroyd shortly after formed a link with Rowe & Pitman, the stockbroker. The latter partnership is designed to develop an international dealing joint venture in which both parties would contribute a combined £17m worth of capital.

"This will not go live until October 1," said Mr Raven, "when we have new office space and our telephone communications system is in place. But to take advantage of the new rules we have decided to form a new company 100 per cent owned by Akroyd as a short-term measure and that will go live on April 30. All dealing in overseas securities will be transferred to the new company."

At Strauss Turnbull, in which Hambros Bank has just acquired a 29.9 per cent stake, a three-way link-up between Strauss, Societe Generale, and Hambros has been created for an international dealership with £10m of capital. Strauss Turnbull says it is "not in a hurry. We won't go live with the international dealing company until early autumn. We will let the other people make the mistakes."

'We'll let other people make the mistakes'

What will it mean for the institutional client? "If I had a client who wanted to dispose of 150,000 Western Mining shares and I could place only 100,000 I would be able to take 50,000 of the stock I couldn't place on to our books whereas in the past the 50,000 shares might have had to be left with the client," said one broker.

There is still an enormous selling job to be done with the institutions to win back some of the business lost to the Americans. All firms are anxious to explain their new services to clients in London. "We have got to get out on the road," said another jobber.

International dealerships will allow securities firms in London to prepare themselves for dual capacity and the arrival of full negotiated commissions. The immediate question is whether the move can achieve its objective of winning business away from competitors at a time when the Stock Exchange rules have not been wholly relaxed.

Cecil Parkinson, the former Trade and Industry Secretary

Sir Nicholas Goodison, Stock Exchange chairman

Newbigging joins MacGregor team

An unexpected change in careers for David Newbigging at the ripe young age of 50 might be described as: out of the quick frying pan and into the fire.

He served for 30 years in Hong Kong with the trading group Jardine Matheson, became chairman (or taipan) in 1971, and was finally ousted by Simon Keswick last year after a battle with the Keswick clan.

Today he joins another chairman under pressure. He becomes a part-time member of Ian MacGregor's National Coal Board in London.

As one of the five part-time members of the board he will serve for three years initially—but his term could be renewed.

MacGregor has considerable respect for the role of part-time, non-executive board members. As a part-time member of the BL board he exerted personal influence in the late 1970s upon the stand by the management of the car group against union militancy.

Newbigging is seen as a welcome reinforcement to the stern MacGregor line during current NCB board-room discussions on the miners' strike.

Newbigging was born in China and joined Jardines in 1954. Although he left the "princely Hong" as Jardines is known in Hong Kong, before he was 50 he was already one of the company's longest-serving top men.

Coal mining will not be his only concern in London. He has been made a non-executive director of Provincial Insurance from April 25, and is also to join the board of Provincial Life Assurance Company. He is a member of the International council of Morgan Guaranty Trust company, and he recently rejoined the board of Rennies Consolidated Holdings of South Africa.

That South African job could cause friction between Newbigging and miners' president Arthur Scargill in view of the latter's implacable hostility towards any links with South Africa.

"If you must know I got the job by lying about my age"

Men and Matters

Don't ring us . . .

I brought you the news last week of abortive attempts to establish a facsimile transmission link between the Department of Trade and Industry and the FT.

Now a mole tells me of a further hiccup in Whitehall's efforts to put into practice the "modernise or fossilise" philosophy preached by information technology minister Kenneth Baker.

His department's press office, as well as lusting for an up-to-date facsimile machine, has also long yearned for a modern push-button telephone system to replace its old-style dial phones.

A short while ago British Telecom was invited to send round a salesman who offered them just the thing—a small electronic key system bristling with advanced features.

Smiles soon turned to frowns, however, after expert investigation revealed a fatal flaw.

The system could not be pressed into government service because it lacked the necessary British Telecom approval for use with the kind of apparatus installed elsewhere in the department.

The whole matter is, as they say, currently under review.

Sweet revenge

Red faces on the London sugar market—one of the brokers, Woodhouse Drake Kay made a mistake and included a highly confidential telex from its New York office with its routine market report circulated to clients and competitors.

Their man in New York was in good, racy form. He not only supplied colourful comments on the company's strategy and dealings in world sugar; he also had some pungent comments on others involved.

One competitor, he said was "hoping to nail us to the wall." Another he referred to as "these vultures." But perhaps the biggest gaffe was to describe representatives from a leading sugar exporting nation in unflattering terms.

Competitors are gleefully passing on the remarks.

All blacked?

In New Zealand Rugby football is a religion, and its gods are the tough men who wear the All Black Rugby jersey.

Thus it is that shock, anger, and bewilderment are mild words to describe current feelings among a large body of New Zealand players and supporters. So high are feelings running that there is a move by players, supporters, and some top Rugby officials to break away from the International Rugby Board (a cabal of eight nations which determines the rules of the game).

As cynics may have already concluded, money rather than the game is at the bottom of the rumpus.

Stuart Wilson, aged 29, last season's All Black captain, and already a folk hero as a wing threequarter of legendary ability, has written a book. None of the Rugby afficionados has read the work yet: it has not even been published.

But the International Rugby Board has flatly rejected a call from New Zealand to lift the ban on book royalty payments so that the national hero can enjoy the fruits of his literary labours. Wilson has announced his retirement from the game and believes he is entitled to accept the proceeds of the book. But the rules are explicit that he will lose his amateur status if he does so.

The move to quit the board is backed by the expectation that New Zealand would continue to have plenty of Rugby friends. In the club bars they are comforting themselves by saying that South Africa and Australia would almost certainly continue playing with the All Blacks.

Sky high

Can a mere mortal comprehend the enormity of the U.S. national debt?

LHW Futures of London has passed on some figures worked out by the American Bankers' Association which strive to put the matter into perspective.

By next year the debt, if stacked up in paper money, would comprise a pile of $1,000 bills stretching 120 miles into the air.

And the bankers add that by the end of President Reagan's first term the debt added under his administration will have exceeded the cumulative debt of all previous presidents.

Now that's style . . .

Mean time

Did you hear about the Andorran odd-job man who was asked what his average weekly income was? "I couldn't say," he replied, "the average varies so much."

Observer

VOLVO

A Swedish power battle

By Kevin Done, Nordic Correspondent, in Stockholm

THE THUNDER is rolling again around the heavens of Swedish industry. An intricate power game is being played for control and influence at Volvo, the Nordic region's biggest industrial corporation.

Much of the battle is taking place behind the closed doors of the boardrooms of some of the country's major corporations and banks, but the sounds of the fray are reaching the outside world.

Under the leadership of Mr Pehr Gyllenhammar, Volvo has always prided itself on standing aloof and independent from the power constellations traditionally associated with the country's two major banks, Skandinaviska Enskilda Banken and Svenska Handelsbanken.

For several months, however, that independence has appeared to be coming under increasing threat as the so-called Wallenberg group, of which S-E Banken is a part, has bought aggressively into the company, in the process putting together the largest single block of voting shares in the group.

The latest sign of this shifting power balance came a few days ago, when Mr Gyllenhammar, since last year both Volvo chairman and group chief executive, suffered an unprecedented defeat at the hands of his own board, which vetoed his plans for a $100m share issue in the U.S. in June.

Doubts are expressed privately in Swedish financial circles about Mr Gyllenhammar's ambitions to establish himself as a major public figure on the world stage and an industrial statesman, rather than concentrating on running the affairs of Volvo.

His handling of the heavily loss-making oil trading subsidiary, Scandinavian Trading Company, has come in for serious criticism—STC losses and provisions cost Volvo more than SKr 1bn (£91m) last year and Volvo had to pump in SKr 760m in new capital to keep it afloat.

At the same time Mr Gyllenhammar has placed his own prestige heavily on the line as leader of two groups of top European and Nordic businessmen trying to stimulate enormously ambitious industrial and construction projects in Europe. Few doubt his tactical ability, however.

In a move to stalemate the latest Wallenberg powerplay, Volvo has established a new alliance with the one major source of financial and industrial power in Sweden that is big enough in its own right to neutralise the influence of the Wallenberg federation, namely Skanska Cementgjuteriet. Skanska is the country's biggest construction group, but it is also one of Sweden's largest and richest investment companies with an extensive portfolio of stocks and property.

Most importantly, it is also willing to exercise its muscle, as witnessed last year when it steam-rollered its way into control of Sandvik, the special steels and tools group, after becoming dissatisfied with the way the company's affairs were being conducted.

The current battle for power around Volvo has arisen in the vacuum left by the death of some 18 months ago of Mr Marcus Wallenberg, the man who for decades headed the most powerful banking and industrial dynasty in Sweden.

Marcus Wallenberg held an almost legendary position as the leader of Swedish industry and business both at home and abroad. He was a vital intermediary and counsellor to the Social Democratic governments which ruled Sweden during the decades of its emergence as a modern industrial state. His relationship with the political administration was cordial but respectful and restrained, a far cry from today's far more uncertain climate where relations between government and industry have become heavily politicised, not least by issues such as the introduction of wage earner funds.

Mr Gyllenhammar has been more than ready to assume the mantle left by Marcus Wallenberg, but it is clear that it hardly fits securely.

The Wallenberg federation—no formal group exists—takes in many of the heights of Swedish industry and banking, including S-E Banken, Saab-Scania, Ericsson, Atlas-Copco, Alfa-Laval, SKF, Asea, Stora Kopparberg and Electrolux. Many of the important shareholdings in these groups are held by two investment companies, Investor and Providentia—Mr Peter Wallenberg, Marcus's son, is chairman of both—as well as by a number of allied trusts and pension funds. The same names turn up again and again on the various boards.

Volvo chairman Pehr Gyllenhammar (left), Marcus Wallenberg, the late Swedish industrial leader (centre) and his son, Peter, who now leads the Wallenberg camp

Volvo has traditionally lived outside this sphere, but in 1982 in the last months of Marcus's life it was allowed access to the federation—with the old man's imprimatur—and there were strong signs of a rapprochement emerging between Volvo and the Wallenberg group.

Volvo moved in to acquire 25 per cent stakes in both Atlas-Copco, the engineering group and in Stora Kopparberg, the forest products concern. The industrial logic of these investments may be questioned for Volvo, an automotive, energy and food group, but they marked a definite shift in the Swedish power game. Allied to the Volvo investments, in 1982 Pehr Gyllenhammar became a full member of the board of S-E Banken, and also a member of the board of Atlas-Copco, a company where Peter Wallenberg has spent much of his working life, since 1970 as chairman. Last year Mr Gyllenhammar also moved on to the board of Storakopparberg where Peter Wallenberg was already vice-chairman.

Initially there were strong doubts about Peter Wallenberg's ability to step into his father's shoes, but over the last year the Wallenberg camp has regrouped under his leadership and has started to reassert itself more strongly, challenging the upstart Volvo's wider role in its traditional sphere of influence.

In August last year Investor and Providentia bought control of a block of shares with more than 5 per cent of the voting rights in Volvo. Together with other purchases and existing shares, interests associated with the Wallenberg group have built holdings that could control 15-20 per cent of the Volvo stock, the largest single voting block. "They have been ready to pay a premium for the stronger voting power of Volvo A shares," says one investment banker in Stockholm. "That must mean that at some time they want to wield power."

Most piquantly, the chairmanship of S-E Banken itself fell vacant as these share transactions developed. The main rival candidates were Pehr Gyllenhammar and Peter Wallenberg.

Each lacked the overwhelming strength to overcome the other, and as a result they stalemated. The chairmanship went instead to the banking professional, Mr Curt Olsson, the bank's deputy chairman, an acceptable neutral choice for both camps. At Volvo, however, Mr Gyllenhammar has not been sitting idly by watching the Wallenberg counter-attack gnaw away at his power base.

In recent weeks he has begun to forge the new alliance with Skanska, designed to hold in check the Wallenberg interests and ensure Volvo's — and his own — scope for independent action.

Several weeks ago Protorp, an investment company dominated by Skanska, bought up 240,000 shares in Volvo, involving nearly 2 per cent of the voting rights and making the company one of the 10 largest shareholders.

Late last week a new package of moves further cemented the budding Volvo/Skanska alliance. Volvo itself purchased a 21.3 per cent interest in Protorp from Skanska and Euroc, the building materials and engineering group closely allied to Skanska.

In exchange Skanska and Euroc have acquired 9 per cent of the equity in Sonessons, hitherto an independently managed subsidiary of Volvo, which held 51.8 per cent of the equity. The 9 per cent stake is worth about SKr256m (£23m) at current market value.

Sonessons has emerged as one of Sweden's fastest growing companies with a turnover that jumped from SKr 500m to SKr 4bn in five years. Originally in light engineering, it has branched out in a series of acquisitions into pharmaceuticals and medical equipment. Volvo is planning to reduce its own share to only 25 per cent in coming months.

Beyond the various equity links, Volvo said that it is also planning to co-operate with Skanska in industrial projects abroad.

Investment bankers in Stockholm see the moves as very smart footwork by the Volvo chairman. "The Haak/Gyllenhammar axis (Bengt Haak is chairman of Skanska) is one that not even Peter Wallenberg would dare to challenge," said one financial analyst.

For itself, Skanska also sees the alliance as a way of strengthening both its own and Volvo's freedom of action. "Volvo is a good and stable company," said Mr Birger Lewhagen, managing director of Skanska, "but in addition we have similar attitudes when it comes to our companies' independence from the big ownership groups."

The power battle may now return behind closed doors for a while, but given the apparent ambitions of both sides, it is unlikely to stay there for long.

Lombard

The great jobs puzzle

By Samuel Brittan

THE continuing rise in UK unemployment during a period of vigorous economic recovery is not only distressing, it is also puzzling. Whatever the fundamental reasons which have caused the unemployment average to rise from one business cycle to the next, one would expect unemployment to fall, or at least level off during the upturn phase.

For a time last autumn it looked as if it was happening. In October and November seasonally adjusted unemployment did indeed fall. But it started to rise again in December. Taking the whole period since September, which has been clear of the effects of recording changes, the average monthly rise has been just over 10,000—which is still enough to add ½ per cent per annum to the unemployment rate.

To make matters worse, vacancies which have often proved a better indicator and had earlier been rising rapidly have fallen by 18,000 from the peak of 167,000 which they reached in the autumn.

It is still possible that various distortions are affecting the figures. For instance, the number of people in special employment and training programmes has fluctuated; and vacancies have been affected by the ebb and flow of people from community programmes. Moreover, the seasonal corrections may not always be right. But it would be wishful thinking to suppose that all that is wrong is statistical error, which may after all point in either direction.

The continuing climb in unemployment is all the more puzzling because of all the signs, for instance, in the latest CBI report of the economic recovery broadening out and of the greater likelihood of the Treasury's 3 per cent growth estimates being exceeded than of its being missed.

The saloon bar explantion is that whatever happens to orders and output, most employers will do anything other than take on workers. A rational reason for this refusal might be that wages and other employment curbs (including the risks of having to pay redundancy money) are too high. While this may be so as a general tendency, there is no evidence that real labour costs, as experienced by employers, have risen over the last year or two. The element that has changed is orders, output and business prospects—all favourably.

The explanation may simply be that productivity is rising faster than expected. The latest estimate suggests that output per head has been rising by 6½ per cent per annum in manufacturing and perhaps 2½ per cent in the whole economy; and the figures could be underestimates because of the deficiencies of production-based series.

To keep unemployment stable, output has to rise by at least as much as the sum of productivity increase and the rise in the civilian labour force. The latter is expected to rise this year by 160,000 or 0.8 per cent of employees — a temporary peak. So if recent productivity trends continue, output would have to rise by about 3 to 3½ per cent for unemployment to level off.

The Treasury originally expected productivity growth to slow down after the burst in recent years. If it has not done so, and if indeed it has been at a higher rate than officially estimated, this would be some explanation of the continued upward creep in unemployment. But this may not be all. It is possible that the 80,000 rise in employment between March and September 1983 came partly from outside the ranks of the registered unemployed. This would be likely to be so, if the majority were women, as some evidence (in the absence of full data) suggests.

There is no space here to suggest policy. But it may be that the economy can take a somewhat faster increase in monetary demand than previously assumed without inflationary consequences. If, as many City commentators suggest, the Budget and monetary policy are more stimulative than officially admitted, this may be no bad thing, provided that the extra demand does not leak into higher wages at the expense of jobs. It is for this very reason that the Chancellor wants to play down the stimulus and emphasise the tight money aspects still in play.

Letters to the Editor

Service costs of Sunday trading

From the Director of the Oxford Street Association

Sir,—Colin Paterson of the Retail Consortium is by no means unrepresentative of the trade's views on Sunday trading, as Mr Fletcher of ASDA suggests in his letter of March 27. This association, in its evidence to the Home Office enquiry, remarked on its serious concern about the implications for retailing's infrastructure, which are glossed over or ignored by Mr Fletcher.

The increase in trade for those who open on Sundays in Scotland, which has no relevance to the major English conurbations, or for those elsewhere who currently flout the law, is as unsurprising and as ephemeral as the early gains for retailers who offered Green Shield stamps. To argue that consumer spending will increase in proportion to trading hours is to offer a simplistic solution to our economic problems: open all shops for 24 hours a day and the retailing boom would revive manufacturing industry at a stroke.

Mr Fletcher states that to spread "fixed" costs over longer trading hours is anti-inflationary. But fixed costs are not. Retailing does not operate in isolation from society. Should one or two of our important stores take advantage of total freedom to trade, and given the competitive state of the market, this would lead to an Oxford Street "open on Sundays."

We would then need changes in the physical distribution system and improvements in banking and postal services, public transport, policing and traffic control, hospital, ambulance and fire services, and of the multifarious and expensive public services such as street cleansing, refuse disposal, traffic wardens, trading standards officers and other local authority personnel.

With Oxford Street trading on Sundays, would not Brent Cross, Croydon, Wood Green and all other London shopping centres follow suit? To assume that the increased costs of such infrastructure services would be disproportionately less than any assumed increase in revenue is surely to ignore the current arrangements for Sunday overtime rates—double, and in some cases, treble the standard.

Retail enterprise, as Mr Fletcher rightly points out, exists to provide a profitable service to the public. But it also has an obligation to its staff, the majority of whom are female, often wives and mothers. Sunday is the one day still guaranteed them for family pursuits. I regret that Mr Fletcher made no mention of the impact of Sunday trading on the staff employed in retailing, who should be its prime asset.

Harry Shepherd.
49 Wellington Street, WC2.

New enterprise in 'grey areas'

From Mr Brian Robson

Sir,—Research into the workings of parts of several major towns and cities in the UK has convinced me that failure to recognise the role which certain of these parts play in the local economy is one reason for our flagging national economy.

It is acknowledged by many here and abroad that nearly all new enterprise starts in cities or towns. It can only do so there, and only then if there is a large and healthy pool of goods and services to support it and all of which it in turn becomes a part.

What is perhaps less widely acknowledged is that the major seed-beds of enterprise are quite specific parts of towns and cities, namely the overlap areas between the "core," "centre" or "heart" and the inner residential and mixed-use areas. What gives cause for alarm is that public policymakers and commercial interests have been systematically pouring weed-killer on these valuable seed-beds for several decades.

In a paper to the conference on "The Future of the City Centre" (since published by Academic Press 1983), the writer observed that such areas have the following characteristics:

a. High employment (or work) density;
b. Most of the employment (or work) not registered or known by the local authority;
c. Slightly run-down appearance;
d. Cheap accommodation;
e. Great vulnerability because of b and c.

These are the "grey areas" ripe for ring roads, parking lots or clearance for no clearly understood motive.

This, of course, destroys not only the activities within the area but, in destroying the linkages with areas inside and out, also adversely affects those other areas and the general economic health of the town.

Even when such an area is cleared for redevelopment of a positive nature the result may not be advantageous to the local economy because local firms are then likely to be priced out, giving way to what I would describe as a "colonial economy" where much of the money, except for rates and wages, goes outside instead of recirculating in the locality. (The dangers of foreign ownership to the national economy are well known.)

A glance at those cities where the dole queues are longest and trouble greatest invariably picks up those where the most clearance has been carried out, often with a fine system of new roads.

In some cities, however, some such areas have survived the depredations of anachronistic planning theory and the money market. This letter is really a plea for their positive conservation, possibly by use of commercial improvement area legislation, although it must be emphasised that such areas are essentially mixed-use. They also include retail, service, pubs, cafés and residential use, the latter having a significant effect in stimulating economic activity in the area.

Manufacturing and services in such areas are frequently of a specialist nature with a retail outlet, sometime representing the reason why some people go to the city at all. Hence the necessity for a near-central location, but all these form part of a matrix of interrelated activities. Some stay in the area of mutual support but occasionally grow to the extent of being able to carry out their own servicing, canteens and the like.

Only then does an industrial estate location become really feasible, although the advance factory sheds out of town are suitable for low employment activities needing bulk storage only occasionally.

The mixed use areas overlapping city centres and inner city areas — where these have survived the "silly sixties syndrome" — therefore require:

(a) Security and confidence from redevelopment and road blighting;
(b) Some sort of protection from the depredation of economic forces, including rates.

Given the ability to tailor legislation to local need, these areas given "activity conservation status" should recommend at least the same sort of support as that given to major conservation towns, but with a different emphasis. It is perhaps no accident that these conservation towns appear to be burgeoning economically, with unemployment mostly well below the national average.

Such a solution might be a meeting ground for partnership schemes between central and local government to the advantage of each. Most politicians, central and local, are people of good will who would like to take any steps to revive the economy. Watering and manuring the seed-beds of local economy could be one of the ways.

Brian Robson.
School of Architecture, University of Newcastle upon Tyne.

Rents in enterprise zones

From Mr D. S. Redfearn

Sir,—The phenomena discussed in your letters column on April 3 by Messrs Law and Tooke merely confirm what a little forethought would lead one to expect.

If there were no taxation at all, in "enterprise zones" or anywhere else, competition for use of land, belonging as it does to the few, would ensure a minimum return to the entrepreneur, and a maximum residue for the landlord.

Taxation cannot reduce the minimum for which an entrepreneur can afford to operate; but it can, and does, reduce the landlord's residue. To decrease taxes as they are now levied is therefore to increase rent.

It would be a different story if taxation were levied at the very source of production, i.e. according to the value of land irrespective of whether or not the opportunities it presented were being used. This would be a genuine incentive tax, and the "enterprise zones" would soon live up to their name.

D. S. Redfearn.
15, Fennell's Close, Burton Road, Eastbourne BN21 2RJ.

From Mr John Hatherley

Sir,—Please allow me to develop a point raised in Mr Leonard Tooke's letter on rents in enterprise zones (April 3). Behind his and Mr Law's letters is a fundamental matter of public policy, and indeed of morality.

Mr Tooke wrote: "Those who regard site values as a justifiable private gain are being short-sighted, and those who fail to collect them are merely giving this advantage to others."

The question is simply: Who should recoup the value increment when public money, especially, improves a locality? The Exchequer directly by tax, which has the additional attribute of pruning inflation in land prices back towards the natural supply/demand level, and of reducing PSBR or tax on other taxpayers than site owners? Or should it be the person or company owning the site? I suggest that the former is appropriate.

Private property in land is unknown in tribal societies—ironically also in the Common Law of England. I was astonished recently to read in a book by a Hindu sage for the spiritual improvement of his followers: "The earth is the property of God, but we, the living entities, especially the so-called civilised human beings, are claiming God's property as our own, under both an individual and collective false conception.

"If you want peace, you have to remove this false conception from your mind and from the world. This false claim of proprietorship by the human race on earth is partly or wholly the cause of all disturbances of peace on earth."

We in Britain cannot put privately-owned land back to communal ownership, but we can ensure that the community recoups its own through taxation.

John Hatherley.
16, Brighton Road, Coulsdon, CR3 2BA.

Pakistan denies A-bomb allegation

From the Minister (Information), Pakistan High Commission

Sir,—You reported on March 27 that a spokesman for the Indian Foreign Ministry had alleged that Pakistan had made an atomic bomb and that China had helped to explode it in northern China. This allegation is utterly false.

Unlike India, which exploded a nuclear device in the Rajisthan Desert in 1974, Pakistan has neither made nor proposes to make or acquire a nuclear bomb or similar device. Pakistan has conducted no atomic explosion and its modest-size nuclear programme is solely for peaceful purposes.

Q. Aziz.
Pakistan High Commission, London, SW1.

Independent still

From the Chairman, Marplan

Sir,—Antony Thorncroft's report (March 29) on the market research industry was surprisingly imprecise in its reference to Marplan and Research International.

Far from "disappearing ... into Research International" as Mr Thorncroft describes it, Marplan simply changed ownership at the end of 1981 (hardly a current development). Until that time, Marplan had been an independent company within the Interpublic group; it was then acquired by Research International and continued its independent mode of operation much as before.

Max Blackston.
Bridgwater House, 5-13 Great Suffolk Street, SE1.

Efficient collection

From Mr P. Tarrant-Willis

Sir,—What interests me about the removal of tax relief on life assurance premiums is that it signals that any Chancellor may now take advantage of the efficient collection systems set up for business purposes to vary, remove, or even subsequently to re-introduce tax reliefs.

These changes may be carried out quickly and accurately using the direct debiting system and the Miras mortgage interest scheme.

In all this, there is little cost or trouble to the collector.

Peter Tarrant-Willis.
Sumatra House, 108, Mill Lane, West Hampstead, NW6.

FINANCIAL TIMES

Monday April 9 1984

Terry Byland on Wall Street

Backing the big winners

GAMING stocks, which in the past have provided Wall Street with drama and thrills, are now establishing themselves as reliable performers in a stock market no longer keen on too much excitement. The leading gaming related issues including Resorts International, the doyen of the Atlantic City operators, Caesar's World and Golden Nugget, all turned in significant increases in share earnings last year and are expected to do the same in 1984.

Nevada, where gaming business took a knock after Atlantic City had entered the scene, continued to stage a recovery last year, while statewide gaming revenue advanced by 9 per cent to \$3.2bn. At Atlantic City, the aggregate net win – the industry's profit – was up by 19 per cent to \$1.8bn, without any of the additional capacity which have been associated with earlier growth.

The Nevada hotel/casinos depend more heavily than Atlantic City on the hotel-based visitor, who is staying at least overnight and whose custom reflects the well-being of the American and Pacific economies as a whole.

Las Vegas, which has felt the reduction in the flow of Mexican, Chinese and Arab visitors, turned in its lowest percentage increase in year-on-year win, according to the Nevada Gaming Control Board.

The Nevada gaming industry is fighting to regain its former status, chiefly by offering improved hotels and facilities and strongly promotional air fares.

The state is already showing signs of benefiting from the strength of the U.S. economy and the consequent upturn in the business travel and convention market. With the Olympic Games in prospect pre-booked convention sales

U.S. GAMING STOCKS

	Share price	p/e ratio
Resorts Int.	43⅝	13.6
Golden Nugget	10⅝	10
Caesar's World	12	14
Hilton Hotels	50⅞	15
Bally's Park	14⅝	16

are substantially ahead of last year. Hilton Hotels in Las Vegas are now running at 80 per cent of capacity, against 68 per cent a year ago.

Among the sector leaders, both Caesar's World and Golden Nugget have major casinos in Nevada and are trying to attract the high-rollers who are thought more likely to respond to the Nevada name than to that of Atlantic City.

But a questionmark must hang over whether Nevada can recapture the double-digit growth rates of the early 1970s. The strongest growth prospects still seem to lie in Atlantic City, now that the brief standstill in the extension of existing casino space appears to be over. Holiday Inns, the only operator of two casinos in Atlantic City, is opening a substantial extension of its Harrah's Boardwalk Casino and Caesar's has similar plans to add to its Boardwalk Regency. These extensions alone will increase casino space in Atlantic City by 17 per cent.

In the past, increased casino space has meant increased net wins at Atlantic City. The last big leap forward came in 1982, when a 33 per cent increase in casino floor area was translated into a 36 per cent rise in the aggregate net win.

Casino capacity will rise another 20 per cent by the end of next year (1985) as Hilton Hotels opens its Marina Hotel and Bally's Park Hotel extends its existing premises.

The increased muscle of the conventional hotel groups in Atlantic City *underlines the new threat to* Nevada that the East Coast upstart is now bidding for a share in the upmarket high gaming sector which has previously been Nevada's province.

All this can only be good news for Resorts International, which has *seen its stock continue to move up* against a weak market this year. The stock price has been held to \$42 by the repurchase at that price of 1.9m shares, in 1983, Resorts lifted net earnings by 47 per cent to \$3.20 a share.

It appears to be successfully fighting off a challenge from Golden Nugget at the slot machine end of the business and is aiming at the overseas premium-rated customer through expansion of its baccarat games. Forecasts for Resorts' profits range to around \$4.00 a share a gain of 25 per cent. This would put *the stock on a prospective earnings* multiple of about 10.5, hardly a generous rating when the Dow Jones smokestack stocks are currently on 15.5 times.

The other Atlantic City casino operators are also set to share in the area's continued gaming growth. Golden Nugget and Caesar's World are likely to report sharply higher earnings this year. But they will always have one ace in the hole – further recovery in Las Vegas will give them an extra boost.

WALL STREET WELCOMES END OF COSTLY VIDEO DISC VENTURE

Disposals put RCA back in tune

BY PAUL TAYLOR IN NEW YORK

IT HAS been a trying and at times embarrassing decade for RCA. The one-time darling of Wall Street – known in its heyday simply as "radio" – has until recently followed a zig-zag path of expansion and contraction. Profits fell sharply from a peak of \$315.3m in 1980 to \$54m a year later, while the share price languished.

But now the slumbering giant, led by Mr Thornton Bradshaw, who became RCA's fourth chief executive in six years in 1981, appears finally to have grasped the nettle, focusing on its core businesses – communications, information and entertainment.

RCA is selling its CIT financial services division – which it acquired in 1980 in a \$1.2bn deal which almost brought the group to its knees – to Manufacturers Hanover Bank for \$1.51bn.

Profits rebounded by 40 per cent last year to \$240.8m from \$174m. The net return on sales of \$8.98bn crept up to a slightly more respectable 2.7 per cent.

Now RCA has announced that it is pulling out of video discs – a product introduced in 1980 and once described as its "priority project of the decade." RCA will have spent more than \$500m on the video disc – including upwards of \$300m in operating losses on the venture in the last three years.

While the decision was clearly a painful one, as Mr James Magid, an industry analyst with L. F. Rothschild noted yesterday: "It is never good news to fail." Nevertheless it underlines Mr Bradshaw's determination to improve profitability – even if it means taking tough decisions.

For that, the former Atlantic Richfield executive is being given full marks on Wall Street. In fact after stripping out the \$175m pre-tax first quarter special provision related to the video disc decision, and a \$75.7m accounting gain, RCA reported a 117 per cent increase in first quarter profits to \$69.1m.

The sharp improvement in RCA's underlying profitability in the first quarter reflects the much improved performance of the group's other main businesses, which range from the Hertz car rental company to the NBC radio and television network.

In electronics, while broadcasting equipment sales remain depressed, revenues and earnings excluding the video disc operation rose sharply to record levels. Higher earnings were also reported by the consumer electronics division – RCA remains the leading U.S. maker of television sets and the premier U.S. VCR maker.

RCA's broadcasting division is also doing better. NBC's flagging fortunes in recent years were due to poor television audience ratings but, although it still has the smallest audience share among the three major networks, it is catching up. Last year the broadcasting division reported a 45 per cent pre-tax earnings jump to \$156.2m.

The rental car business – until last year scheduled for disposal – also appears to have staged a turnround.

Generally Wall Street analysts believe RCA is on the mend. Mr Magid believes current profits "are about half what they could be" – which implies the company still has a long way to go.

In recent months the improvement in RCA's performance coupled with the cash wealth which will flow from its CIT divestiture has led to a wave of speculation about the group being a possible takeover target.

While most analysts believe RCA is still too large to be easily digested by almost any suitor, it has not escaped their attention that the group last month proposed a series of measures for shareholder approval which would make acquisition of the company more difficult.

Security Pacific plans to take 5% stake in UK stockjobber

BY ALISON HOGAN IN LONDON

SECURITY PACIFIC, the tenth largest bank in the U.S., is planning to take an initial 5 per cent stake in the London-based firm of stockjobbers, Charles Pulley, which will complement its much larger 29.9 per cent stake in Hoare Govett, a leading UK firm of stockbrokers, for which it paid £8.1m (\$11.6m) in 1982. An integration of the broker's and jobber's interests is a possible long-term aim.

Hoare Govett introduced Charles Pulley to the capital markets group of Security Pacific headed by Mr Will Richardson in Los Angeles.

Mr Richard West, managing director of Hoare Govett, said yesterday: "The jobbing business is a people's business, and we looked at the people in it. If and when we need a *market-making capacity, this might* be the team that we could integrate."

Mr Bernard Leaver, the 37-year-old senior partner of Charles Pulley, said the firm had had discussions with an Australian merchant bank and two London financial institutions. "We liked the good name of Hoare Govett and the strategy of Security Pacific. We can provide the expertise at the London end for a business with a world-wide marketing power."

He said they were "hedging their bets" on future links, depending upon how the market develops and what further changes the stock exchange introduced.

A formal agreement has still to be signed between Security Pacific and Charles Pulley and the permis*sion of the stock exchange granted* but with "the lawyers batting for both sides," Mr West says it should not take too long.

Charles Pulley is the sixth largest jobbing firm. Mr Leaver joined in 1978 from Pinchin Denny with outside backing from two Dutch colleagues Mr Gordijn and Mr Voerman. Together, they formed Fortress Belleggingen UK, which is a limited partner in Charles Pulley. Mr Leaver and Mr Martin West are both working partners in the firm.

Mr Leaver said: "Charles Pulley was a very sleepy old firm which had got smaller and smaller over the years as people left to join other firms. I felt there were changes afoot in the City, I was quite young, and decided that a small firm might provide me with better opportunities."

Shuttle hitch as docking move fails

By Terry Dodsworth in New York

THE LATEST U.S. space shuttle mission will today resume its attempts to retrieve the malfunctioning Solar Max satellite following the failure yesterday of a tricky manned space walk manoeuvre.

The three-day-old mission ran into its first major hitch when a device which astronaut Dr George Nelson was attempting to attach to the Solar Max as part of the procedure designed to stop it spinning in space, failed to connect properly. Further attempts were made to grab onto the Solar Max using the shuttle's robot arm but these also proved unsuccessful.

Described as one of the most daring ventures so far in the shuttle programme, Dr Nelson's manoeuvring around the Solar Max was planned as the first step in a complex procedure to haul the satellite aboard the Challenger *shuttle craft* for repairs.

Wearing a rocket-propelled back pack, the astronaut flew the 200 feet from the shuttle to the Solar Max, adjusted his speed to match the speed at which the satellite, was spinning, then moved in between its solar panels to try and install a docking pin.

This pin failed to connect properly, leaving the satellite still revolving too quickly to be seized by the shuttle's robot arm.

The plan is for Dr Nelson to fix the docking pin, then fire a counter blast from his back pack to stop the satellite rolling, at which point it will be possible to retrieve the Solar Max using the robot arm. The satellite will be brought aboard the shuttle, repaired in its cargo bay, and replaced in its correct orbit.

Earlier in the flight Challenger had performed flawlessly. Climbing into an orbit 293 miles above the earth – higher than any previous shuttle expedition – it released the largest satellite the spacecraft has deployed so far on Saturday. The 11 tonne vessel, the Long Duration Exposure Facility, will carry out a series of 57 experiments before it is retrieved a year from now

The mission's main function, however, is to try and repair the Solar Max, and thus demonstrate the feasibility of servicing, fuelling and assembling structures in space.

Mr Frank Cepollina, manager of the Solar Max repair operation, said the programme could extend the life of the satellite for another six or seven years. "It no longer makes economic sense to say bye bye to these assets just because one little component fails," he added.

The \$77m satellite was launched in 1980 but began to malfunction after 10 months in orbit because of blown fuses. According to NASA officials the planned repairs would cost only \$45m while a replacement would cost around \$235m.

'European pillar' for Nato

Continued from Page 1

to rely on the nuclear deterrent, he said. As long as that position lasted, "I cannot imagine that Europe could be decoupled from the U.S. without immediately coming under pressure."

WEU originates from the 1948 Brussels Treaty between Britain, France, Belgium, the Netherlands and Luxembourg, which was modified in 1954 to include West Germany and Italy.

It has been regarded as moribund for several years, but security is within its brief and it has a parliamentary assembly that meets twice a year in Paris.

A senior French official emphasised at the weekend that the assembly was one of its main attractions. "The assembly has the competence to discuss defence and we think it is essential in this period that there is as much public discussion as possible," he said.

Paris is understood to have told its WEU partners that the expansion of the peace movement in Europe reflected a wrong but growing public belief that European interests were totally subordinated to U.S. strategic concerns.

Pressure on miners to hold strike ballot

BY PHILIP BASSETT AND JOHN HUNT IN LONDON

MR NEIL KINNOCK, leader of Britain's Labour Party, is privately bringing intense pressure to bear on the country's National Union of Mineworkers (NUM) to resolve the dispute over its failure to call a national ballot for its strikes against pit closures.

The strikes are now entering their fifth week and picketing is expected to resume tomorrow in the Nottinghamshire coalfield, which has decided to continue to work.

Sir Michael Havers, the Attorney-General, yesterday strongly condemned the mass picketing. He said political motives and self interest could never justify breaking the law and it was the Government's *duty to stand firm.*

Mr Kinnock has been embarrassed by the union's failure to call a national ballot and Mrs Margaret Thatcher, the Prime Minister, has repeatedly challenged him to say where he stands on the issue.

Acting as Mr Kinnock's emissary, Mr Stanley Orme, the Labour Party's energy spokesman, has held a private meeting with Mr Peter Heathfield, general secretary of the NUM.

Mr Orme is believed to have emphasised that the Labour leader and the shadow Cabinet will be put in an even more difficult position if Mr Arthur Scargill, the NUM president, tries to frustrate a decision by the union's executive at its next meeting on Thursday to call a national ballot.

A majority of the executive, by 14 to 10, are believed to be in favour of a ballot. Among the union's leaders, there is now intensive tactical thinking about how to influence Thursday's decision.

If a national ballot is called, it is by no means certain that it would go against strike action. A majority of 55 per cent would be required among the 190,000 NUM members entitled to vote.

Even if there was a majority against a strike, militant coalfields like Yorkshire, Britain's biggest, and Scotland might ignore it.

Mr Kinnock and Mr Gerald Kaufman, Labour's home affairs spokesman, will decide today whether to *apply for an emergency debate in* the House of Commons over police handling of picketing during the dispute. It is expected that they will apply and that a debate will be granted for tomorrow.

French expect investment rise

Continued from Page 1

In the controversy over plans to axe at least 25,000 steel jobs over the next few years, M Fabius, who has been given a new job of co-ordinating restructuring of hard-hit sectors, announced yesterday he would go to the Lorraine capital of Metz on Tuesday to meet local politicians, unions and businessmen.

The offer to hold the meeting in Lorraine – rather than to summon the groups to Paris – seems part of a move by M Fabius to assuage strong local feelings over the steel cuts. But following the sometimes *violent demonstrations last week in* the region, he is likely to benefit from the protective presence of riot police.

M Fabius has been forced by his new duties to cancel a visit to Japan planned for later this week. He will take part in an interministerial meeting today to study government measures to help distressed sectors.

On the union front, steelworkers were *yesterday chartering buses* and trains for Friday's Paris demonstration. Apart from disgruntled steelmen, this is likely to be joined by workers from hard-hit mechanical engineering and shipbuilding industries

World Weather

		°C	°F			°C	°F			°C	°F			°C	°F
Ajaccio	S	15	59	Dubrovnik	S	20	68	Malaga	S	20	68	Salzburg	R	5	41
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Readings at mid-day yesterday:

C–Cloudy D–Drizzle F–Fair Fg–Fog H–Hail R–Rain S–Sun Sl–Sleet Sn–Snow T–Thunder

German strike decision

Continued from Page 1

"warning strikes" which have so far held stage, could cripple the promising economic recovery now under way.

Count Otto Lambsdorff, the Economics Minister, admitted yesterday that a reduction in the standard 40-hour week could be part of the recipe for removing unemployment. "But the 35-hour week, with no matching cut in pay, is the wrong way to go about it," he said.

More ominously, Herr Heinrich Franke, the new chairman of the Federal Labour Office, observed that protracted labour disruption might well boost unemployment – precisely the opposite of what the 35-hour week is designed to achieve.

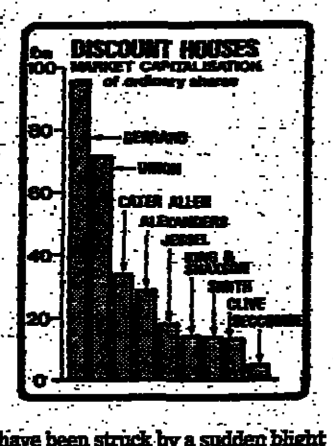
But the chances of an agreement *in extremis* now plainly depend on the employers softening their insistence that the basic 40-hour week must stay.

IG Metall was offered on Friday a 3.3 per cent pay rise this year, plus early retirement facilities and a greater flexibility in working hours. But the Frankfurt talks foundered because the employers, sensing that in a fight they would prove the victors, refused to countenance any reduction in the normal working week.

THE LEX COLUMN

Revolving doors in Lombard St

The function of the City of London's discount houses has not changed for decades. They have progressively adjusted to the changing structure of the Bank of England's money market operations and have diminished in number through merger, but their role as chosen intermediaries between the Bank and the money markets has never been challenged. Now that role is being recast. The revision of the London Stock Exchange's rule book has suddenly made them attractive as marriage partners, has opened up to them new areas of endeavour and has threatened them with competition in their own backyard.



Somewhat to their own surprise, the discount houses have become a rare seam of one of the City's most precious commodities – market-making expertise. Now that the stock exchange looks certain to *open its doors to dual capacity and* corporate members, any number of institutions are queueing up outside for the chance to make markets, particularly in gilt-edged. With the principal gilt jobbers already accounted for, the discount houses are virtually the only source of home-grown knowhow.

Until recently, the independence of the discount houses was virtually ensured by Bank of England charter. The disastrous takeover of Clive Discount by Sime Darby in the mid-1970s only reinforced the Bank's belief that foreigners and banks, to name but two categories, were inappropriate partners for the discount houses. That approach has now been abandoned and, if criteria of functional independence can be met, the Bank will listen seriously to any offer for a discount house. *Alexanders has* already been snapped up by Mercantile House and others will surely follow.

The Bank had been loosening its grip for some years in any case. Since the monetary control arrangements of 1981, the houses have played a less sensitive role in the formulation of interest rate policy and, as their special responsibilities have declined, so have their privileges. The abandonment of reserve assets increased their dependence on market funds and, when club money is finally abolished, *they will effectively be standing on* their own feet.

Yet, in order to retain a balance between the houses themselves and to keep a careful eye on their activities, the Bank has discouraged diversification and equity-funded growth. By a logic which would appear perverse in the stock market, only houses whose balance sheets have been struck by a sudden blight have been permitted rights issues. The overall effect of the Bank's line has been to stunt growth. Over the past decade, only Union and Gerrard have reported an average increase in disclosed assets that was any more than the increase in sterling M3.

Yet this paternal attitude hardly squares with the Bank's public commitment to free capital flows and equal opportunity – known in-house as the level playing field principle. The arrival of dual capacity will in some respects be very helpful to the Bank new ways of selling debt and perhaps even reduce the overall cost of borrowing.

Yet it would clearly be anomalous to encourage broader participation in the gilt-edged market while retaining the existing exclusivity in the bill market. It is already rather curious that a one-year bill passes through the discount houses under the supervision of the Bank while a gilt of the same maturity is handled by the jobbers under the the auspices of the stock exchange.

The discount market is a rare example of dual capacity already in action in the City and it seems sensible that the house should extend into gilt-edged as principals. Conversely, of course, the gilt-edged market makers should extend backwards into bills. Eventually, the level playing field may accommodate a team of designated counterparties, dealing with the Bank in all manner of instruments – as primary dealers do in the U.S. The trick is to draft the rules in such a way that the players want to take to the field *in the first place.*

The simpler qualifications for a place in the team are capital adequacy and distribution. Fresh capital ratios will need to be devised and discount houses will presumably be permitted free access to the capital market – for example to expand internationally. But last week's purchase by Kleinwort Benson of a U.S. primary dealer boasting net assets of only \$18.2m suggests that almost all discount houses are already well enough capitalised for making markets in gilt-edged.

The houses do not have a ready-made client list for any but short-dated gilts, although they could easily open for business in a limited way with a page or two on the Reuters screen.

The real sticking point is the Bank's attitude towards the separation of functions within a designated institution. The Bank may well insist that designated dealers are capitalised separately from their parents and that trading between, for example, a banking parent and a discount house is heavily circumscribed if not excluded. That an intermediary should be impartial to all end-users is a foundation of the Bank's edifice. But the risk is that, in seeking to prevent conflicts of interest and market manipulation, the Bank may compromise its parallel objectives of open access and enhanced liquidity.

National Westminster

The clearing banks will be meeting formally before the end of this month to compare medicines for their deferred tax ailment. Today's 1983 report and accounts from National Westminster carry a late addendum which suggests proper prescription – and rather nasty it is, with the biggest spoonful reserved for NatWest itself.

The total deferred tax liability on its leasing portfolio stands at no less than £1.2bn and a once and for all provision is indicated to accommodate the budget's impact. The stated liability assumes a 52 per cent mainstream corporation tax rate and NatWest apparently feels confident of doing enough additional leasing to postpone the crystallisation until after the rate has fallen to 35 per cent. But even adjusted for this small blessing, the total liability only falls to £806m – so, with just £236m so far set aside, the net loss to the bank's reserves this year looks set to emerge at about £570m.

Taken in 1983, this loss would have reduced NatWest's free capital from 5 to 4 per cent of its total public liabilities. The debt to equity gearing, ignoring this year's earnings, would still leave room in 1984 for sufficient extra subordinated debt to allow public liabilities to grow much on the scale of 1983 without any further damage to the free capital ratio. But steps to rebuild it might be judged a sounder priority.

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FINANCIAL TIMES
Monday April 9 1984

INTERNATIONAL BONDS

Aggressive pricing brings deluge for Eurodollar market

BY MARY ANN SIEGHART IN LONDON

THE EURODOLLAR bond market had the air last week of a group of children playing Monopoly – it started off quite happily but soon it was clear that the whole thing would end in tears. Unfortunately, the money lost by issuing houses was real.

IBHF Bank bond average		
April 6		Previous
99.565		99.504
High	1983-84	Low
100.009		98.058

The first fixed-rate new issue of the week was for Statoil, guaranteed by Norway. It seemed sensibly priced and was lapped up by investors.

Then issuing houses started to overreach themselves. SBC International launched a bond for International Telephone and Telegraph (ITT) paying just 11½ per cent for three years. This was at least 80 basis points less than ITT would have had to pay in the U.S. domestic market and, judging by the Euromarket's reaction to it, about 30 basis points less than it should have paid over here. Within a day, it was trading at a two point discount, way outside its 1⅞ per cent total fees.

Its price was dragged down by the subsequent flood of aggressively priced, fixed-rate deals into an unresponsive market. GTE and Citicorp, in particular, issued bonds which fell to discounts of more than one point outside their total fees.

By Friday, though, bankers realised that new fixed-rate issues would succeed only on realistic terms. Morgan Guaranty launched a $150m, five-year bond paying 12¾ per cent and Toronto Dominion, a $50m issue with a 12⅝ per cent coupon, also for five years.

The floating rate note market was far healthier, with seasoned bonds edging up in price. Broken Hill Pty, Australia's largest company, launched what lead manager Credit Suisse First Boston (CSFB) claimed to be the first project finance-linked bond in the Euromarket in connection with its Queensland coal acquisition from General Electric of the U.S. It was extremely popular, closing on Friday at a tiny 0.07 per cent discount from par.

Since the total fees were 1⅞ per cent, some dealers suggested the deal was too generously priced and that smaller fees would have sufficed. However, CSFB points out that, despite the fact that the deal was guaranteed by the Bank of Tokyo, investors could have been nervous of the potential risks of project finance. Indeed, even at Friday's price, the bond was still trading on a higher yield than equivalent Bank of Tokyo paper.

Prospects for this week are highly uncertain. Although secondary market prices picked up on Friday, they were still at least ½ point down on the week and dealers were nervous. Short-term interest rates have been extremely volatile and the expected U.S. discount rate rise did not materialise until long after European markets had closed down on Friday night. Moreover, the $675m of fixed-rate issues launched last week is overhanging the market.

Several new floaters are expected this week, and today two presentations to prospective co-managers are scheduled: an FRN by Interfirst Bank (the launch is imminent); and a fixed-rate bond from Coast Savings, backed by U.S. government agency securities.

Both D-Mark and Swiss franc secondary markets have been dull all week. Prices in both sectors hardly changed and trading was light.

CREDITS

BY PETER MONTAGNON IN LONDON

Argentina urged to be realistic in debt talks

A WEEK after the $500m rescue package launched for Argentina in the wake of the Inter-American Development Bank annual meeting, it is clear that the Government of President Raúl Alfonsín still faces several major hurdles in coming to terms with its $43.6bn foreign debt.

The immediate problem of the quarterly balance sheet deadline has passed for U.S. banks, but Argentina still has to complete difficult negotiations with the International Monetary Fund and reach a rescheduling agreement with commercial banks creditors and possibly with governments. All this needs to be at least well on the way by June 30, or a new debt service arrears problem will arise for U.S. banks.

At the moment few banks are willing to predict that all these negotiations can be completed in such a short space of time. Argentina has sent an aide-memoire to the IMF setting out its basic economic targets but has yet to agree on how they will be implemented.

Inflation nearly doubled in the year to January, and since then it has accelerated even further, reaching nearly 480 per cent in March, but President Alfonsín has little political room to manoeuvre towards economic restraint.

Creditor banks are now relying on pressure from other Latin American countries to push Argentina towards an IMF agreement. Most other debtors have already taken stringent measures themselves and do not want to see their own progress towards recovery jeopardised by a new debt crisis in Argentina. This was the main reason why Mexico proposed the emergency package and why it was quickly joined by Brazil, Colombia and Venezuela.

Yet even an IMF agreement would not solve Argentina's problems entirely. The Alfonsín Government is determined to renegotiate the terms of the 1982/83 rescheduling arrangements agreed by the former military regime. The extent of the concessions it wants has not yet been defined – though it may become clearer at new talks this week between Sr Bernardo Grinspun, the economy minister, and leading bank creditors. But senior bankers fear that far-reaching concessions would be hard to sell to the financial community as a whole and might create an awkward precedent with other borrowers also seeking to renegotiate better terms.

There is still marked uncertainty in the banking community about Argentina's readiness to treat its problems realistically. This sets it apart from other crisis cases like Brazil and Mexico, where there was always a basic political will to come to terms with creditors, and makes the final outcome of its debt talks much harder to predict.

Bankers close to Argentina well understand the political constraints on the new government, but this understanding is not shared by all the country's 300 bank creditors, whose patience has been sorely tried. All of them will have to be party to any eventual settlement of the debt problem, which will almost certainly include a substantial new loan – $3bn is the current provisional estimate for 1984.

Some bankers on the 11-bank steering committee handling talks with Argentina fear that Sr Grinspun is labouring under an illusion that all creditor banks will readily accept any package that is put to them.

That selling new debt rescheduling packages is no easy matter is, however, shown by the time it has taken Mexico to complete its $3.8bn credit. By last week, commitments had been received from all but a handful of banks and at the end of the day total subscriptions are expected to reach $4bn, which will allow $200m to be rebated on a pro-rata basis according to subscriptions received.

Yet it has taken nearly four months to reach this point, and there are still some pockets of resistance in the Middle East, southern Europe and among a few U.S. regional banks, even though Mexico's economic performance makes it the biggest success story in Latin America.

In the syndicated credit market, Ireland appears to have calmed the storm it created by seeking to renegotiate last year's $500m credit on softer terms. It has now modified its proposals to take account of the main criticisms from participating banks.

One other small development last week was a discreet acceptance by the Soviet Union's Foreign Trade Bank of an increase to $200m from $150m in the credit it is seeking from a group of Western banks.

NEW INTERNATIONAL BOND ISSUES

Borrowers	Amount m.	Maturity	Av. life years	Coupon %	Price	Lead Manager	Offer yield %
U.S. DOLLARS							
Nippon Sheet Glass §‡	25	1994	10	3¼	100	Daiwa Europe, Nomura Intl.	3.250
Ajinomoto Co. §	100	1999	15	3	100	Nomura Intl., Nikko Secs., Merrill Lynch, Daiwa Eur.	*
Prov. of Newfoundland ‡	75	1991	7	13	100⅛	CCF, Dominion Secs. Ames	12.944
Statoil ‡	100	1988	4	12	100	Deutsche Bank, Merrill Lynch	12.000
ITT ‡	100	1987 (c)	3	11½	100	SBCI, Lehman Bros., Lazard Bros., Mgn. Guaranty	11.500
Comsat ‡	100	1991	7	12¼	100	CSFB, BA Intl., Nomura Intl., Deutsche Bk., SBCI, UBS Secs.	12.250
Bk. of Montreal †(b)‡	250	1996	12	⅛	100	Mgn. Stanley, UBS Secs.	–
Broken Hill Pty. †(a)‡	356	1996	12	¼	100	CSFB, Bk. of Tokyo Intl.	–
Broken Hill Pty. †Ø‡	46	1996	12	⅛	100	CSFB, BA Asia	–
Onoda Cement Co. ¶	30	1989	5	7¾	100	Nikko Secs., Robt. Fleming, IBJ Intl.	*
GTE Fin. ‡	75	1987 (c)	3	12	100	Orion Royal Bank	12.000
Citicorp ‡	100	1987 (d)	3	11¾	100	Morgan Grenfell	11.750
Bk. of Helsinki †(b)‡	50	1999	15	⅛	100	Morgan Guaranty	–
Banco de Vizcaya †(a)‡	75	1996	12	¼	100	Lehman Bros., Orion Royal, Mitsubishi Fin.	–
Dai-Ichi Kangyo †(a)‡	150	1996	12	⅛	100	Merrill Lynch, Dai-Ichi Kangyo, CSFB, Mgn. Stanley	–
Toronto Dominion Bk. ‡	50	1989	5	12⅝	100	Morgan Stanley	12.625
Mgn. Guaranty Tst. Co. ‡	150	1989	5	12¾	100	Morgan Guaranty	12.250
CANADIAN DOLLARS							
CIBC ‡	60	1988	5	12¾	100	CIBC Ltd.	12.750
D-MARKS							
Tsumura Juntendo ¶‡	100	1989	5	3⅜	100	DG Bank	3.375
C. Itoh Fuel ¶	25	1989	5	3½	100	Deutsche Bank	*
Hamon Co. ¶	80	1989	5	3½	100	Dresdner Bank	*
GMAC **‡	50	1989	5	6⅞	100	Deutsche Bank	6.875
New Zealand ‡	250	1991	7	7¼	100	Commerzbank	7.250
World Bank ‡	300	1992	8	7¼	100	Deutsche Bank	7.750
SWISS FRANCS							
Nippon Sheet Glass **§‡	30	1989	–	1¾	100	SBC	1.750
Dainippon Screen Mfg. **§‡	100	1990	–	1¾	100	SBC	1.750
Sweden ‡	125	1994	–	5¾	100¼	SBC	5.716
Toda Kogyo **§‡	60	1989	–	1¾	100	SBC	1.750
Yoshitomi Pharm. **¶‡	100	1989	–	3⅜	100	CS	3.375
Daiki Aluminium Ind. **§‡	20	1989	–	1⅞	100	Handelsbank	1.875
NGK Spark Plug Co. **§	100	1989	–	2	100	SBC	*
State Elec. Commn. Victoria **‡	100	1991	–	2	100	SBC	5.000
Eksportfinans Norway ‡	100	1994	–	5¼	100	Citicorp Bk. (Switz)	5.250
Belgium **‡	100Ø	1989	–	5¾	100	Bque. Mgn. Grenfell en Suisse, Kredietbk. (Suisse)	5.750
Nat. Australia Bk. **‡	109.2	1989	–	5½	99¾	UBS	5.559
Tokyu Store Chain **§	30	1989	–	2	100	Swiss Volksbank	*
Mitsui Construction **§	50	1989	–	2⅜	100	Citicorp Bk. (Switz)	*
Prov. of Br. Columbia **‡	325	1989	–	5	100	CS	5.000
N. Z. Railway Co. **‡	25	1992	–	5⅝	100	SBC	5.625
Tauernkraftwerke	125	1994	–	*	*	SBC	5.625
STERLING							
Council of Europe ‡	50	1992	8	11⅜	100	Hill Samuel	11.375
GUILDERS							
EEC ‡	200	1994	10	8¾	100½	ABN, Amro Bank	8.673
ECUs							
Nippon Credit Bank	50	1991	6½	11	100	Soc. Gen. de Bque., BNP, Nippon Credit Bk. H. K.	11.000

* Not yet priced. ‡ Final terms. ** Placement. § Convertible. † Floating rate note: coupon is spread over 6-month Libor. (a) Spread over mean of 6-month bid and offered rate. (b) Spread over 3-month Libor. ¶ With warrants. (c) Extendable to 6,9 or 12 years. (d) Extendable to 15 years. Ø Placement in Asia. Note: Yields are calculated on AIBD basis.

U.S. BONDS

Discount rate rise shifts focus back to money supply

THE FEDERAL Reserve has finally acted. At the end of a week in which the Fed funds rate touched 12 per cent at one stage, the banks raised their prime rates for the second time in three weeks, long bond prices fell to new lows, and the Fed topped it out with a half percentage point increase in the discount rate from 8½ per cent to 9 per cent. The change was the first since December 1982, and the first increase since May 1981.

The Fed's move late on Friday night ended a protracted period of uncertainty and speculation in the financial markets. Nevertheless, it has probably generated as many questions as it has answered. In particular, attention has been focussed once more on the Fed's reserve management policy and on the money supply.

The Fed attributed the discount rate increase to technical factors, and specifically to the "relatively wide spread between short-term market rates and the discount rate," to that extent, as several Wall Street economists noted late on Friday, the increase was inevitable, yet that does not lessen its significance.

Speculation about a discount rate rise had increased steadily over the past few weeks and the markets had partly discounted it. However, the Fed waited to act until the Argentine debt agreement was complete, the Fed funds rate had peaked and was on the way down, and the credit markets had stabilised.

On the face of it, the discount rate increase marks a significant tightening of the Fed's stance, especially given the widespread view that the Fed has now formally shifted its Fed funds monitoring range upwards, meaning that it has in effect endorsed the firming of interest rates brought about by the market itself.

Some Wall Street economists argue that the Fed has reverted at least in part to a policy of tightly controlling reserves and the money supply, after a year and a half during which it set unofficial interest rate targets, as a result of which there was a substantial expansion in the monetary base but a steady Fed funds rate.

The Fed's discount rate increase could mark something of a watershed. As a clear statement of political independence and a long awaited signal reaffirming the Fed's anti-inflationary stance and thus a bolster to its market credibility, the move could have a profound effect on a depressed market.

There remain a number of major uncertainties, not least the unresolved budget deficit debate and concerns about mounting private credit demand.

Ahead of the discount rate move, the credit and money markets had turned in a patchy performance. After falling to a new low of 95 on Tuesday to yield 12.65 per cent the price of the Treasury long bond closed the week at 96½ to yield 12.40 per cent, down from 12.56 per cent a week ago.

Most short-term rates rose during the week as the Fed funds rate traded up above 10.5 per cent, though it edged down on Friday to show a marginal increase over the week by th Friday close.

New issue activity showed renewed signs of life despite a half-point decline in seasoned medium-term issue prices ahead of the Friday rally and a quarter-point decline in the price of long-term bonds.

New issue volume bounced back to $1.38bn compared to less than $600m the previous week. Among the new issues Occidental Petroleum launched $350m of 10-year 12.25 per cent variable-rate subordinated notes, while Chase Manhattan sold $400m of three-year floating rate notes.

Paul Taylor

U.S. INTEREST RATES (%)

	Week to Apr 6	Week to Mar 30
Fed funds weekly average	10.41	9.97
3-month CD's	10.40	10.33
3-month T-Bills	9.77	9.68
30-year Treasury Bond	12.60	12.49
AAA Utility	13.50	13.50
AA Industrial	13.25	13.25

Source: FT estimates.

In the week ending March 26 M1 rose by $2.2bn to $538.3bn.

Turner may bid against ABC for cable network

BY PAUL TAYLOR IN NEW YORK

TURNER BROADCASTING, the U.S. television and cable news group, and American Broadcasting Companies (ABC) could emerge as rivals for control of the Entertainment and Sports Programming Network (ESPN), the largest cable network in the U.S. which reaches some 30m households and is controlled by Texaco, the oil giant.

Turner, which runs CNN, a 24-hour-a-day cable news channel and owns WTBS, the second largest cable channel, said it was studying information in preparation for making a bid for majority control of ESPN in the near future.

Texaco, the third largest U.S. oil company, gained control of ESPN as part of its acquisition of Getty Oil earlier this year. It has confirmed that it is considering the sale of the 24-hour-a-day cable sports network, and has held discussions with a number of interested parties.

The oil company, which owns 70 per cent of ESPN, was widely expected to sell Getty's non-oil interests following the merger, but adds that no formal offers have been received.

Earlier this year ABC acquired 15 per cent of ESPN under a 1982 agreement with Getty. The remaining 15 per cent is owned by Mr William Rasmussen, the network's founder, and his family.

ABC acquired its 15 per cent estake for about $30m and at the same time extended until October 1986 its option to purchase a further 34 per cent. ABC also has first right of refusal should Texaco put its stake up for sale.

Based on the price ABC paid for its 15 per cent stake, analysts believe ESPN could be worth around $200m.

Carma to double capital

By Bernard Simon in Toronto

CARMA, THE Calgary land developer which is one of the heaviest casualties of the property slump in Alberta, intends to double its common share capital as part of a C$700m (US$547m) refinancing programme.

The company will issue 31.2m new shares to settle various obligations, bringing the number outstanding to 55m by mid-May. The issue is insufficient, however, to cover Carma's commitments and it said further issues are possible before the end of 1986.

Preferred shareholders will receive a total of 22.7m common shares worth C$10.5m at current market prices for their 6.5m preferred shares with a par value of C$130m. Carma will issue another 2.9m common shares to holders of C$57m of debentures in part payment for interest owed since the beginning of 1983. Th remaining shares will be issued to three major creditors. The issue will reduce the stake of Carma's major shareholder, the Nu-West Group, which has serious financial problems of its own from 49 per cent to 41 per cent.

Moulinex maintains earnings recovery

BY DAVID MARSH IN PARIS

MOULINEX, THE French kitchen equipment maker, boosted group net profits last year to FFr 68.8m ($8.5m) from FFr 33.2m in 1982, despite a sharp fall in operating profits.

The result, which maintains the group's recovery after a halving of earnings in 1981, was achieved on consolidated turnover up only 6.2 per cent to FFr 2.91bn, against FFr 2.74bn in 1982.

The company said its results were affected last year by restrictions on South American sales, the restructuring of its North American subsidiary, and the low volume rise in its business. Among other exceptional factors, were high depreciation costs and charges from an early retirement scheme.

Consolidated operating profits fell to FFr 111.2m from FFr 133.9m in 1982.

The company has already indicated that comparisons with the 1982 results would be distorted by the cost of restructuring U.S. operations. This follows the setting up of a joint venture with American Regalware kitchen equipment company.

Moulinex is still the object of rumours over who will take over when M Jean Mantelet, the 83-year-old chairman and main shareholder, eventually gives up the reins. M Mantelet, who has presided over Moulinex since 1932 and has no heir, announced in 1981 he was looking for a new partner—but does not seem to have found one yet.

Revised offer by Kelso for US Industries

BY TERRY DODSWORTH IN NEW YORK

THE TAKEOVER struggle for U.S. Industries, the Connecticut based industrial and consumer products group hotted up at the weekend, when Kelso and Company, the New York investment bank revised its offer to a price well in excess of the bid from Hanson Trust of the UK.

Kelso is offering $24 a share in its new leveraged buy out proposals, valuing the company at $490m Hanson had previously bid $22 a share through its Hanson Industries subsidiary in the U.S. following Kelso's original offer of $20 a share in February.

Kelso's revised offer was made after the close of trading on the New York Stock Exchange on Friday, when the shares stood at $21.75, valuing the group at $444m. The proposals are being considered by a committee of outside directors, who advised the full board on the original terms.

Growth for Wereldhave

BY WALTER ELLIS IN AMSTERDAM

WERELDHAVE, the Dutch property fund which last year mounted a successful defence against a determined takeover bid by PGGM, the Netherlands' largest pension fund, recorded a 150 per cent rise in the growth of its investments last year, to a record total of Fl 116m (U.S.$32m). A dividend of Fl 9 per ordinary share has been proposed, against Fl 7.5 in 1982.

INTERNATIONAL APPOINTMENTS

Finance chief for AT & T

● Mr Robert M. Kavner has been elected a senior vice president of AT & T and will become chief financial officer on May 1. He is a partner in Coopers and Lybrand. He will be responsible for directing and co-ordinating the organisations which integrate the financial systems and analytical processes for the corporation as a while including financial management, accounting, budgeting, economic forecasting, tax planning and other related matters.

● New managing director of Sweden's fifth largest general insurance company, ALLMANNA BRAND, is to be Mr Nils-Yngve Danielsson, until recently managing director of the Gothenburg-based marine and general insurance company, Atlantica Insurance Company.

● WALT DISNEY PRODUCTIONS has made the following appointments: Mr Lee Reem to vice president, sales promotion, worldwide; Mr Wendall Mohler to vice president, publishing; Mr Roland Pierce to vice president, retail merchandising; Mr Gary Krisel to vice president, USA licensing; Mr Pete Smith to executive director, USA licensing; and Mr Joe Pellegrino to director, USA licensing.

● Mr Frank J. Biondi, Jr, who had been president and chief executive officer of HOME BOX OFFICE INC, has been appointed chairman and chief executive of the Time Inc subsidiary. Succeeding him as president is Mr Michael J. Fuchs, who was president of the HBO Entertainment Group. Mr Fuchs will also serve as HBO's chief operating officer, a newly-created title. Mr Winston H. (Tony) Cox, president of the HBO Network Group, will assume additional responsibility for the programming activities of HBO's Cinemax service. As president of the Network Group, he is in charge of HBO's sales, marketing and network operations functions.

● Sir Noel Foley retired as chairman of CSR, Sydney, on March 31. Mr Keith Steel has been appointed chairman.

● FREEPORT MINERALS COMPANY, a subsidiary of Freeport-McMoRan Inc, has appointed Mr Dennis R. Twining president of Freeport Metals Sales Co. Freeport Metals is a new entity established for the purpose of centralising all sales and marketing activities for metals, both domestic and foreign under a single unit. Mr Twining was named director of metals and ore sales in 1980 and vice president of Freeport Minerals in 1983.

Mr Dennis R. Twining, president of Freeport Metal Sales

● FIRST COMMERCE SECURITIES B.V., an international stock brokerage firm based in Amsterdam, has appointed two managing directors. They are Mr B. W. J. Beessma, who is director of corporate development and Mr E. H. J. C le Clercq, who is director of sales.

● MORGAN GUARANTY TRUST COMPANY OF NEW YORK has promoted Mr Willy Deuin to vice-president, Mr Francois Detandt to assistant vice-president and Mr Theo Van Engeland to assistant comptroller. All are assigned to the Brussels office.

● Dr Remo Denti has been nominated to succeed Mr Heinrich Hug as new managing director of ZYMA, the Swiss pharmaceutical affiliate of the Ciba-Geigy group. Mr Hug is to retire after the coming shareholders' meeting.

● Mr Max Engel, hitherto vice-president, operations, of Swiss-based Nova-Park Management Group, has been appointed chairman of SWISSOTELS, the joint venture of Nestle and Swissair in the hotel sector. He will be succeeded at Nova-Park, which operates a number of hotels in Europe, the Middle East and North America, by Mr Maurice R. Taylor.

● On May 1, Mr G. Kardam, managing director of N.V. NEDERLANDSE GASUNIE, will retire. Mr A. H. F. Grotens, formerly executive vice-president plastics division of DSM, will succeed him. Dr J. Blom has succeeded Mr G. C. v.d. Wall, who has retired as director gas purchasing and export departments. Dr Blom was with Royal Dutch Shell Group as operations manager "explorations" in Peru.

● Mr Barman A. O'Doherty has been appointed president of TEXACO OIL TRADING AND SUPPLY CO. This division is responsible for worldwide purchases and sales of crude oil and petroleum products. He was senior vice president in the division. He succeeds Mr Peter I. Bijur, who is assuming new responsibilities for special assignments related to Texaco's recent acquisitions.

● Mr Norman P. Blake, Jr, has been named chairman and chief executive officer of HELLER INTERNATIONAL CORP, recently-formed U.S. subsidiary of The Fuji Bank. Heller International is the holding company for Walter E. Heller and Co and Walter E. Heller Overseas Corp.

Mr Blake has been executive vice president-financing operations of General Electric Credit Corp.

● Mr Klaus J. Jacobs, currently managing director and vice-chairman of the Swiss-based coffee and chocolate concern JACOBS SUCHARD, intends to withdraw from the day-to-day management of the company and succeed Dr Nello Celio as board chairman. Dr Celio, a former Swiss finance minister, is to retire. At the same time, group financial director Mr Guenter Bolte is foreseen as a new board member, while on July 1 Mr Francois N. Steeg will take over Mr Jacobs' position at the head of the group management.

● Mr Carl R. Turner has been appointed division vice president and general manager of the RCA solid state division, New Jersey. Mr Turner will be responsible for the development, manufacturing and marketing of all solid state products at RCA. He was staff vice president, planning, for RCA electronic products and laboratories. He succeeds Mr Robert S. Pepper, who has been named vice president business development electronic products and laboratories.

FT INTERNATIONAL BOND SERVICE

U.S. DOLLAR STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
Alaska Housing 11¾ 94	100	94½	95	0	−0¾	12.70
Australia Com. 11⅛ 90	100	98½	99	0	−0⅛	11.50
Australia Com. 11½ 95	300	92⅜	92⅞	+0⅛	−0⅜	12.72
Australia Com. 11¾ 98	100	91⅞	92⅜	−0⅛	−1	12.82
Australian I. Dv. 11 89	75	†94⅞	94⅜	+0⅛	−1⅛	12.60
Bank of Tokyo 11⅞ 90	100	95¾	96¼	+0⅛	−0¾	12.76
Beneficial O/S F. 12 91	100	93¾	94¼	+0⅛	−0⅛	13.37
Britoil Fin. 11⅞ 90 ...	125	95⅜	95⅞	0	−0½	12.86
Canada 10⅞ 88	500	96⅞	97⅜	+0⅛	0	11.68
CCCE 12⅜ 95	75	96⅛	96⅝	+0⅛	−1	13.18
Citicorp O/S 10¾ 90 ...	100	89⅞	90⅜	+0⅞	−0⅛	12.79
DNC 11¾ 91 WW	50	†94½	95	−0⅛	−0⅛	12.93
DNC 11¾ 91 XW	50	93¾	94¼	+0⅛	+0⅛	13.11
Denmark Kgdm. 12 91	100	96	96½	+0⅛	−0½	13.07
Denmark Kgdm. 12⅛ 93	100	97	97½	+0⅛	−0¾	12.73
Digital Equip. 11¾ 89 ...	150	97½	98	+0⅛	−1	12.38
Dutch Mines 11⅛ 91 ...	150	†93½	94	0	−0⅛	12.78
EDC 11⅛ 89	150	94⅞	95⅜	+0⅛	−0⅛	12.54
EEC 12 93	50	96¾	97¼	0	−0¾	12.55
EIB 11½ 90	200	94⅛	94⅝	+0⅛	−0¾	12.77
Eksportfinans 11½ 90 ...	100	93⅜	93⅞	+0⅛	−0½	12.96
Gen. El. Cr. 11 91 WW	200	93¼	93¾	0	−0¾	12.45
GMAC O/S Fin. 11¾ 90	100	96	96½	+0⅛	−0¾	12.21
III 12 89	100	96¼	96¾	−0⅛	−0½	12.99
Ind. Bk. Japan 11½ 89	125	95¾	96¼	+0⅛	−0¾	12.63
Ind. Bk. Japan 11⅞ 91	100	95¼	95¾	+0⅛	−0⅛	12.80
Int. Ppr. O/S Fin. 12 91	75	97¼	97¾	+0⅛	−0½	12.65
ITT Finan. 11½ 89 WW	125	96⅞	97⅜	−0⅛	−1⅛	12.20
J. C. Penney 11⅞ 90...	100	96¼	96¾	+0⅛	−0⅛	12.80
J. P. Mrgn. 11¾ 90 WW	150	94½	95	0	−0⅞	12.59
LTCB 12½ 90	85	98½	99	+0⅛	−0⅛	12.75
Macy O/S 11⅛ 91	100	95¼	95½	+0⅛	−0½	12.75
Mitsui Trust Fin. 12 91	100	95⅜	95⅞	+0⅛	−0½	12.98
Montreal City 12½ 91...	70	97¾	98¼	+0⅛	−0⅛	12.95
Ned. Gasunie 11¾ 91...	75	93½	94	+0⅛	−0⅛	12.65
Nippon Credit 11⅞ 90...	100	95⅜	95⅞	−0⅛	−0⅛	12.86
Nippon Tele. 11⅜ 90 ...	100	96¼	96¾	+0⅛	−0⅛	12.23
Norwest O/S 12⅜ 91 ...	50	†94¾	95¼	+0⅛	−0⅛	13.28
Nova Scotia Pr. 11¾ 91	100	95¾	96¼	+0⅛	−0⅛	12.67
Ontario Hydro 11⅛ 94...	200	93¾	94¼	0	0	12.71
Pacific Gas & El. 12 91	75	†95¾	96¼	+0⅛	−1⅛	12.82
PK Banken 12 96 WW	75	95⅞	96⅜	+0⅛	−0⅛	13.05
Prudential 10⅞ 93 XW	150	†85	85½	−0⅞	−1⅞	12.85
Quebec Hydro 11½ 92...	100	†95⅞	96⅜	0	−0½	12.27
Quebec Prov. 12⅛ 94...	150	98¼	98¾	0	−0⅛	12.59
Royal Bk. Can. 11⅛ 89	100	96⅛	96⅝	0	−0⅞	12.52
Rural & Ind. Bk. 12 91	50	95⅞	96⅜	+0⅛	−0⅛	12.88
Sears O/S Fin. 11½ 88	125	98⅝	99⅛	0	−0⅛	11.79
Sears O/S Fin. 11⅝ 91	150	93⅞	94⅜	+0⅛	−0⅞	12.95
S. Pac. O/S F. 11⅝ 89	75	†94⅞	95⅜	0	0	13.05
Sec. Pac. O/S F. 12 92	100	95¾	96¼	+0⅛	−0⅛	12.82
SEK 11½ 89	100	94⅞	95⅜	0	−0⅞	12.87
Shearson/Amex 12⅛ 94	100	94½	94⅞	+0⅛	0	13.12
Texaco Capital 10⅛ 93	200	90⅛	90⅝	+0⅛	+0⅛	12.21
Texas Insts. Int. 11⅞ 91	150	94¾	95¼	+0⅛	−0⅛	13.00
Tokai Asia 12⅛ 91	100	96⅛	96⅞	+0⅛	−0⅛	13.00
World Bank 11¼ 90	200	93⅜	93⅞	+0⅛	−0½	12.78
World Bank 11⅜ 89 ...	200	95⅜	95⅞	0	−0⅞	12.61
World Bank 11½ 90 ...	150	94¾	94⅞	+0⅛	−0⅛	12.75
World Bank 12 93	200	96⅞	97⅜	0	−0⅛	12.50

Average price changes... On day +0⅛ on week −0½

DEUTSCHE MARK STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
Allied Chemical 7½ 94	125	100⅞	101½	−0⅛	+0⅛	7.37
Amca Intl. 8¾ 91	100	100¼	100¾	−0⅛	−0⅛	8.16
ANAS 8½ 91	150	100	100½	0	−0⅛	8.44
Austria, Republic 7⅝ 94	200	98⅝	98⅞	−0⅛	−0⅞	7.81
Barclays O/S 8⅛ 88	250	102	102½	−0⅛	0	7.85
Baxter Travenol 7⅛ 94	200	98¼	98½	−0⅛	+0⅛	7.48
Credit National 8⅞ 94...	200	100⅛	100⅝	−0⅛	−0⅛	8.06
Degussa Int. Fin. 7½ 94	100	101⅜	102⅛	+0⅛	+0⅛	7.22
EEC 8 92	200	101⅛	101⅞	0	+0⅛	7.76
EIB 8 91	250	100¼	100⅞	−0⅛	−0⅞	7.88
Finland Rep. 7½ 91 ...	150	97⅞	98⅜	−0⅛	−2⅛	7.78
IADB 8⅛ 93	150	†100½	101	−0⅛	−0⅛	8.12
Int. Standard Ele. 7⅞ 90	100	101⅞	102	−0⅛	0	7.03
Mepal Fin. 8⅛ 94	150	100	100½	−0⅛	−0⅛	8.20
Mitsbshi. H. 3½ 89 WW	300	102	102½	−0⅛	−2⅛	3.01
Mitsbshi. H. 3½ 89 XW	300	85⅛	85⅞	−0⅛	−0⅛	7.05
OKB 7½ 88	100	99¾	100	−0⅛	−0⅛	7.52
Pepsico O/S Fin. 7⅛ 94	250	98⅛	98½	−0⅛	0	7.34
Reynolds O/S F. 7⅛ 94	125	101	101½	+0⅛	+0⅛	7.31
Sth. Africa Rep. 8½ 91	200	101½	102	0	0	8.17
SNCF 8⅛ 93	100	100⅞	101⅜	−0⅛	−0½	7.94
Veba Int. F. 4 93 WW	300	121¼	122	−0⅛	−2	1.58
Veba Int. F. 4 93 XW	300	77½	78	−0⅛	0	7.27
World Bank 7¾ 89	100	101⅛	102	0	−0⅛	7.33
World Bank 8 93	300	100⅛	100⅞	−0⅛	−0⅛	7.89
World Bank 8 94	200	100⅛	100⅞	−0½	−0⅛	7.90

Average price change... On day −0⅛ on week −0½

SWISS FRANC STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
Asian Dev. Bank 6 94...	100	100¼	101	−0⅛	−0⅛	5.86
Australia Comm. 5⅛ 96	60	99¾	100	0	+0⅛	5.14
Austria Republic 5⅛ 94	150	99¾	99½	0	0	5.58
Cofiroute 7 94	80	102½	102¾	+0⅛	−0½	6.93
EIB 6⅛ 95	125	101½	101¾	+0⅛	0	5.55
Elec. Power Dev. 5⅝ 93	100	†101	101½	+0⅛	+0⅛	5.46
Finland Republic 5¾ 94	100	99¼	99½	0	−0⅛	5.83
Int.-Am. Dev. Bk. 6 93	100	†100¼	100¾	+0⅞	+0⅛	5.92
Ireland 6½ 93	80	101½	102	−1	−2	6.25
Japan Dev. Bank 5½ 94	100	†101¼	101½	0	0	5.31
Japan Fin. Corp. 5½ 94	100	99½	99¾	−0⅛	0	5.55
Jap. Highway P. 5⅜ 91	100	102	102¾	+0⅛	0	5.27
Kyushu Ele. Pwr. 6⅝ 92	100	101¼	101½	+0⅛	+0⅛	6.41
Mont Blanc Tunl. 6⅞ 93	35	102⅛	103⅛	0	+0⅛	5.96
Nat. Aust. Bk. 5⅝ 94...	100	99½	99¾	0	+0⅛	5.67
Newscorp 6⅛ 94	175	101⅛	101¼	−0⅛	−0⅛	6.07
Nippon Express 5⅞ 94...	100	†99¾	100⅛	+0⅛	+0⅛	5.87
Nippon Tel. & T. 5⅝ 93	100	102½	102¾	−0⅛	−0½	5.39
Nip. Yusen K. K. 5⅜ 92	100	100	100¼	−0½	−0⅛	5.73
OKB 5⅝ 92	100	102	102¼	−0⅛	−0⅛	5.41
Quebec Province 5⅞ 93	100	†101¼	101½	−0½	−0⅛	5.43
Shikoku Elec. Pwr. 6 91	100	†102¼	102¾	0	+0⅛	5.58
Soc. Lux. Cnt. 5⅝ 93...	100	100½	100¾	0	0	5.66
Tohoku El. Pwr. 5⅞ 92	100	†100¼	100½	0	+0⅛	5.89
World Bank 5⅝ 94	200	99	99⅜	−0⅛	+0⅛	5.87

Average price changes... On day −0⅛ on week 0

YEN STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
Asian Dev. Bk. 7⅝ 94...	15	100⅛	100⅞	0	0	7.28
Eurofima 7⅛ 94	10	100½	101	0	0	7.27
Int.-Am. Dv. Bk. 7⅛ 93	15	102⅛	103⅛	−0⅛	+0⅛	7.44
New Zealand 7⅝ 89	15	104⅛	104⅜	0	−0⅛	6.63
World Bank 7⅝ 93	20	103	103½	0	0	7.14

Average price changes...On day 0 on week 0

OTHER STRAIGHTS	Issued	Bid	Offer	Change on day	Change on week	Yield
Br. Col. Hyd. 12 93 C$	125	94⅛	94⅞	−0⅛	−0⅛	12.98
Br. Col. Tel. 12⅛ 99 C$	70	95⅞	96⅜	−0⅛	−0⅛	12.83
Canadn. Oc. 12⅜ 89 C$	60	†97	97½	−0⅛	+0⅛	12.79
EIB 12⅜ 91 C$	80	†96⅛	96⅝	−0⅛	−0½	12.83
Loblaw 12½ 90 C$	35	†95¾	96⅛	0	−0⅛	13.40
Montreal City 12 90 C$	50	†96⅞	97¼	+0⅛	0	12.63
World Bank 12⅛ 90 C$	75	†98⅛	98⅝	+0⅛	−0⅛	12.59
Cie Bancaire 11 90 ECU	37	98¾	99¼	0	−0½	11.23
WestLB F. 10⅞ 91 ECU	50	98⅞	99⅜	0	−1⅛	11.10
Amro Bank 8⅜ 88 Fl	100	103	103½	−0⅛	0	7.85
Bk. Mees & H. 8⅜ 89 Fl	100	99¼	99¾	0	−0⅛	8.37
Int. Stand. El. 8⅜ 89 Fl	100	101⅞	102⅜	+0⅛	0	7.95
Ned. Middnstbk. 9 88 Fl	100	103⅛	103⅞	0	−0⅛	8.00
PHP 8⅛ 89 Fl	75	99½	100	+0⅛	0	8.31
Rabobank 9 88 Fl	100	103½	104	0	+0⅛	7.99
OKB 14 86 FFr	400	100⅝	101⅛	0	+0⅛	13.13
Solvay et C. 14⅛ 86 FFr	200	101⅞	102⅜	−0⅛	−0⅛	13.40
BFCE 11½ 88 £	50	101½	102	+0⅛	+0⅛	10.97
Ciba-Geigy Int. 6⅛ 93 £	25	100	101½	0	0	6.63
Commerzbank 11½ 90 £	25	100⅛	101⅛	−0⅛	+0⅛	11.31
Denmark 10⅝ 89 £	75	97⅝	98⅛	0	−0⅛	11.33
EEC 11⅛ 94 £	50	99⅛	99⅝	−0⅛	−0⅛	11.47
EEC 11⅞ 93 £	50	100⅞	101⅜	−0⅛	−0⅛	11.64
EIB 10⅛ 92 £	50	95½	96⅛	0	−0⅛	11.58
Finland Rep. 11⅞ 88 £	50	102⅛	103⅛	0	+0⅛	11.01
IBJ 11⅝ 85 £	30	99⅛	99⅞	−0⅛	−0½	11.67
III 10⅝ 93 £	25	96⅜	97⅛	+0⅛	−0⅛	11.25
Int. Stand. El. 11⅛ 89 £	50	100	100½	0	−0½	11.03
Norsk Hydro 12 90 £	30	104	104¼	0	−0⅛	10.92
Sweden 11⅞ 93 £	50	99	99¼	0	−0⅛	11.34
Sw. Ex. Cred. 11⅞ 88 £	30	100⅛	100⅝	0	−0⅛	11.10
World Bank 11⅛ 88 £	100	100½	101¼	0	−0⅛	10.82
Electrolux 10 89 LuxFr	500	97⅞	98⅞	0	0	10.43
Europarat 10⅝ 93 LuxFr	600	99½	100½	0	−0⅛	10.75

FLOATING RATE NOTES	Spread	Bid	Offer	C.dte	C.cpn	C.yld
Arab Banking 5⅛ 96 ...	0⅛	99⅛	99½	15/9	10.81	10.99
BBL Int. 5 99	0⅛	98½	98¾	11/4	5	5.07
Banque Indosuez 5⅛ 99	0⅛	99	99¼	21/9	11.06	11.16
Barclays O/S I. 5 2004	0⅛	99⅛	99⅝	2/9	10.56	10.72
BFG Fin. 5⅛ 95	0⅛	99⅜	99⅝	1/8	10⅛	10.45
BNP 5⅛ 95	§0⅛	99	99⅜	6/8	10.19	10.28
Commerzbk. 5⅛ 89 XW	0	99⅛	99⅜	21/6	10	10.08
Creditanstalt Bk. 5 96	0⅛	99⅛	99⅜	28/9	10½	10.69
Denmark 5⅛ 2004	0⅛	99	99⅜	17/8	10⅛	10.47
Dresdener Fin. 5⅛ 89 ...	0	99¼	99½	23/5	10⅛	10.33
EDF 5⅛ 99	0⅛	98⅛	98½	22/8	10.56	10.74
EEC 5 90	0⅛	99⅞	100⅛	5/7	10⅛	10.38
Ferrovie Stato. 5⅛ 99...	0⅛	98⅛	98⅝	31/8	10.69	10.82
Genfinance 5 94	0⅛	99⅛	99⅜	19/7	10⅛	10.18
Grindlays Euro. 5⅛ 94...	0⅛	98⅞	99⅛	1/8	10⅛	10.35
Midland Int. Fin. 5 99...	§0⅛	98⅛	98⅞	6/9	10.56	10.70
Mitsui Finance 5⅛ 96...	0⅛	98⅞	99⅛	1/9	10.56	10.67
Neste Oy 5⅛ 94	0⅛	99	99⅛	23/8	10.56	10.66
Quebec Hydro 5⅛ 94 ...	0⅛	99⅛	99⅜	19/7	10⅛	10.20
Spain 5⅛ 97	0⅛	98	98⅛	23/8	10.56	10.76
Sumitomo 5⅛ 94	§0⅛	98⅛	99	9/8	10⅛	10.24
Sweden 5⅛ 2003	§0⅛	99⅛	99⅞	17/5	10.19	10.21
Sweden Kgdm. 5⅛ 2024	0⅛	†97⅞	98⅛	22/9	11.19	11.42
Takugin 5⅛ 94	§0⅛	98⅞	99⅛	15/8	10⅛	10.86

Average price changes... On day 0 on week −0⅛

CONVERTIBLE BONDS	Cnv. date	Cnv. price	Bid	Offer	Chg. day	Prem
BBC Bwn. Boveri 4¼ 95	2/84	108	†99½	101	+0⅛	−4.66
Daiwa Sec. Co. 5⅛ 98	10/83	481.6	†128½	131	−3	−5.63
Fanuc 3⅛ 98	1/84	8142	140⅛	141⅛	−2⅛	29.61
Fujitsu 3 99	5/84	1320	105⅛	106½	−2⅛	1.96
Hitachi Cable 5⅛ 98	2/82	515	157	158½	−2⅛	0.94
Honda Motor 5⅛ 98	6/83	884	130⅛	131⅛	−4⅛	−3.44
Konishiroku Ph. 4 98	10/83	673	101⅛	102⅛	−3⅛	0.40
Kyowa Hakko 6⅛ 97	2/83	762	134½	135⅛	−1½	10.67
Minebea Co. 5½ 98	5/83	667	110⅛	111⅛	−0⅛	−3.46
Mitsubishi Elec. 5⅛ 98	6/83	398	115⅛	116⅛	−2	0.71
Mitsubishi Heavy 4⅛ 99	1/84	253	103⅛	104½	−0⅛	7.91
Murata 3½ 99	2/84	2939	126⅛	127⅛	−3⅛	24.16
Nippon Oil Co. 3⅛ 99	3/84	1052	118⅛	119⅛	−3	−0.96
Nippon Oil Co. 5½ 98	4/83	964	131⅛	132⅛	−2⅛	−0.79
Nissan Motor 5⅛ 98	4/83	700	115⅛	116⅛	−2⅛	6.91
Olympus Optic. 6⅛ 97	12/82	1157	103⅛	105⅛	−1⅛	5.94
Ono Pharm. Co. 3⅛ 98	3/84	9480	133½	135⅛	+3	−0.02
Orient Leasing 5⅛ 98	6/83	2880	143	144	−1⅛	−7.50
Secom 5 98	11/83	2920	219⅛	220⅛	+0⅛	−4.01
Yamaichi Sec. Co. 5 98	8/83	449.6	132	133⅛	−0⅛	−4.14
Yamanouchi Ph. 4 90	10/83	1806	103⅞	104⅞	+3⅛	50.72
Nippon Air. 2⅛ 94 SwFr	2/84	354	100	102	+0⅛	−0.22
Nippon Shin. 2 92 SwFr	3/84	801	100⅛	102⅛	+0⅛	20.45
Setsu Ppr. 2⅛ 92 SwFr	4/84	677	102½	104⅛	−0⅛	−3.52
Asics 5 92 DM	12/83	520	109⅛	110⅛	−0⅛	24.28
Sum Realty 6⅛ 92 DM	2/83	365	164	165	−0½	−3.46

EUROBOND TURNOVER
(nominal value in $m)

	Cedel	Euro-clear
U.S. $ bonds		
Last week ...	6,448.5	13,963.2
Previous week	5,550.0	12,529.2
Other bonds		
Last week ...	1,792.6	2,115.3
Previous week	2,024.0	2,421.6

* No information available—previous day's price.

† Only one market maker supplied a price.

STRAIGHT BONDS: The yield is the yield to redemption of the mid-price; the amount issued is in millions of currency units except for Yen bonds where it is in billions. Change on week=Change over price a week earlier.

FLOATING RATE NOTES: Denominated in dollars unless otherwise indicated. Coupon shown is minimum. C.dte=Date next coupon becomes effective. Spread=Margin above six-month offered rate (‡ three-month; § above mean rate) for U.S. dollars. C.cpn=The current coupon. C.yld=The current yield.

CONVERTIBLE BONDS: Denominated in dollars unless otherwise indicated. Chg. day=Change on day. Cnv. date=First date for conversion into shares. Cnv. price=Nominal amount of bond per share expressed in currency of share at conversion rate fixed at issue. Prem=Percentage premium of the current effective price of acquiring shares via the bond over the most recent price of the shares.

The list shows the 200 latest international bonds for which an adequate secondary market exists. The prices over the past week were supplied by: Kredietbank NV; Credit Commercial de France; Credit Lyonnais; Commerzbank AG; Deutsche Bank AG; Westdeutsche Landesbank Girozentrale; Banque Generale du Luxembourg SA; Banque Internationale Luxembourg; Kredietbank Luxembourg; Algemene Bank Nederland NV; Pierson, Heldring and Pierson; Credit Suisse/Swiss Credit Bank; Union Bank of Switzerland; Akroyd and Smithers; Bank of Tokyo International; Blyth, Eastman, Paine, Webber International; Chase Manhattan; Citicorp International Bank; Credit Commercial de France (Securities) London; Daiwa Europe NV; EBC; First Chicago; Goldman Sachs International Corporation; Hambros Bank; IBJ International; Kidder Peabody International; Merrill Lynch; Morgan Stanley International; Nomura International; Orion Royal Bank; Robert Fleming and Co.; Samuel Montagu and Co.; Scandinavian Bank; Societe Generale Strauss Turnbull; Sumitomo Finance International; S. G. Warburg and Co.; Swiss Bank Corporation International; Wood Gundy.

Closing prices on April 6

Offer for Subscription by

N. M. Rothschild & Sons Limited

on behalf of

Biotechnology Investments Limited

(a company registered with limited liability in Guernsey on 16th April, 1981 under the provisions of the Companies (Guernsey) Laws 1908 to 1973)

of 2,000,000 Ordinary Shares of 2 cents each at £9.15 per Share

payable in full on application.

Authorised	SHARE CAPITAL	Issued and to be issued
US$150,000	in 7,500,000 Shares of 2 cents each	US$132,000

INDEBTEDNESS

As at 20th March, 1984, the Company had no loan capital (including term loans) outstanding or created but unissued, no mortgages or charges and no borrowings or indebtedness in the nature of borrowing, including bank overdrafts, liabilities under acceptances or acceptance credits, hire purchase commitments, guarantees or other material contingent liabilities.

The Shares now offered rank in full for all dividends and other distributions hereafter declared, made or paid on the issued share capital of the Company other than the interim dividend of 10 cents per Share payable on 31st May, 1984 to shareholders on the register at the close of business in Guernsey on 28th March, 1984.
Preference will be given, in respect of up to 20 per cent. of the Shares now being offered for subscription, to applications made by existing shareholders in the Company. **The procedure for application is set out below.**

This Offer has been underwritten by N. M. Rothschild & Sons Limited.

This document provides information on the Company in connection with the offer (the "Offer") under which investors are invited to subscribe for Shares. No person has been authorised to give any information or to make any representations, other than those contained in this Prospectus, in connection with the subscription of Shares and, if given or made, such information or representations must not be relied on as having been authorised by the Company or by N. M. Rothschild & Sons Limited ("Rothschilds"). Neither the delivery of this Prospectus nor the issue of Shares shall, under any circumstances, imply that there has not been any change in the affairs of the Company since the date hereof.

No person receiving a copy of this Prospectus and/or an Application Form in any territory other than the United Kingdom may treat the same as constituting an invitation to him to subscribe for Shares nor should he in any event use such Application Form unless in the relevant territory such an invitation could lawfully be made to him without compliance with any registration or other legal requirements. It is the responsibility of any person outside the United Kingdom wishing to subscribe for Shares hereunder to satisfy himself as to full observance of the laws of the relevant territory in connection therewith, including the obtaining of any government or other consents which may be required, or other formalities needing to be observed or transfer or other taxes requiring to be paid in such territory.

Shareholders (other than residents of Guernsey, Alderney and Herm) are not liable to Guernsey tax on their dividends. In the case of Shares held by or on behalf of residents of Guernsey, Alderney or Herm, dividends will be paid after deduction of Guernsey income tax.

The consent of the Advisory and Finance Committee of the States of Guernsey under The Control of Borrowing (Bailiwick of Guernsey) Ordinances 1959 to 1976 has been obtained for the issue of Shares in connection with this Offer. It must be distinctly understood that, in giving this consent, the Committee takes no responsibility for the financial soundness of any schemes or for the correctness of any of the statements made or opinions expressed with regard to them.

The Shares have not been registered under the United States Securities Act of 1933 and, except in a transaction which does not violate such Act, may not be directly or indirectly offered or sold in the United States of America (including its territories, possessions and areas subject to its jurisdiction) or to or for the benefit of a United States person. For this purpose, "United States person" includes a national or resident of the United States of America, a partnership organised or existing in any state, territory or possession of the United States of America, a corporation organised under the laws of the United States of America or of any state, territory or possession thereof, or any estate or trust, other than an estate or trust the income of which from sources outside the United States of America (which is not effectively connected with the conduct of a trade or business within the United States of America) is not included in gross income for the purposes of computing United States federal income tax.

All references to "US$", "dollars" and "cents" are to lawful currency of the United States of America.

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New Court, St. Swithin's Lane, London EC4P 4DU.
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Donald Peter Lines (Bermuda)
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Nicolas McAndrew
New Court, St. Swithin's Lane, London EC4P 4DU.
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BANKERS & CUSTODIAN
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AUDITORS & REPORTING ACCOUNTANTS
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LEGAL ADVISERS TO THE COMPANY
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In Guernsey: Ozanne, van Leuven & Perrot,
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LEGAL ADVISERS TO N. M. ROTHSCHILD & SONS LIMITED
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Broadgate House, 7 Eldon Street, London EC2M 7HD.

STOCKBROKERS
Cazenove & Co., 12 Tokenhouse Yard, London EC2R 7AN.

RECEIVING BANKERS
National Westminster Bank PLC,
New Issues Dept., PO Box No. 79, 2 Princes Street, London EC2P 2BD.

INTRODUCTION

Biotechnology, which can be defined as the application of biological organisms, systems and processes to industry, is not new. The use of micro-organisms in, for example, brewing, baking and wine-making is long established. This area of science was, however, transformed by the development in 1973 of recombinant DNA technology, also known as genetic engineering. This technique permits the genes which are responsible for a specific product to be isolated from one organism and 'spliced' into the genetic material of another, enabling the latter to synthesise large quantities of a product which it would not naturally make.

Another biotechnological technique, developed in 1975, involves the fusion of natural antibody-producing cells with cultured tumour cells, making what are called hybridomas. These produce large amounts of highly specific monoclonal antibodies, which have already improved diagnostic testing and purification processes and may lead to methods of directing drugs to particular disease centres in the body. A second emerging diagnostic technique utilises labelled fragments of synthetic DNA, known as DNA hybridisation probes, to identify specific gene sequences.

Biotechnology also encompasses the use of enzymes, which are complex organic catalysts that are essential for the numerous chemical reactions which occur in living organisms. Genetic engineering permits the development of new and improved enzymes which can be used in a variety of manufacturing processes. In another area, advances in biochemical engineering and process control have led to substantial increases in efficiency in the fermentation industry.

These and other recent developments in biotechnology provide enormous potential both to replace conventional manufacturing processes and to develop entirely new products over a wide range of industries. Already genetically-engineered human insulin has reached the market and tests based on monoclonal antibodies are now available for the more rapid diagnosis of some forms of cancer and certain infectious diseases. The recently introduced sweetener, aspartame, is the combination of two amino acids that can be produced in bulk using enzymatic processes. Among other products currently being developed using recombinant DNA technology are human growth hormone, a more effective vaccine against hepatitis B and a blood-clotting agent for haemophiliacs known as Factor VIII.

There are many other examples of how the "new" biotechnology is likely to have a substantial impact not only on human and animal health care but also in areas such as food processing, chemicals, energy, waste treatment and pollution control. Perhaps the application of biotechnology that will eventually prove to be the most important is in plant genetics, because of the possibility of increasing the world's food supply. Plant breeding by classical methods has a long history of outstanding success but is inevitably a slow process because of the relatively long reproductive period of plants. The application of novel techniques to bypass natural genetic barriers, as well as gene manipulation, is only just beginning, but it now seems possible that methods will be developed to breed plants that are, for example, more resistant to disease and drought and which can be grown in areas currently unsuitable for agriculture.

Investment opportunities in biotechnology cover a broad spectrum of companies around the world, both quoted and unquoted. These range from large, well-established companies where the involvement in biotechnology currently represents a relatively insignificant part of the companies' activities, but where its potential strategic impact is important, to small, research-based organisations totally committed to biotechnology developments, where the risk and reward are proportionately greater. There are a number of companies that fall between these extremes, including those involved in such areas as fermentation equipment and laboratory instrumentation.

The Company has sought to achieve an appropriate overall balance in building up its portfolio. Brief details of the Company's quoted investments as at 20th March, 1984 are set out in Appendix A and of its unquoted and restricted investments as at that date in Appendix B. Of the nineteen unquoted or restricted investments, ten are in the broad area of health care, four in agriculture, two in laboratory instrumentation and equipment and one each in chemicals, mineral processing and waste treatment.

There are also exciting investment opportunities involving applications of high technology in the medical field which, although allied to biotechnology, do not always incorporate biological processes. Some examples are diagnostic instrumentation, imaging equipment, implantable infusion pumps and drug delivery systems. The Company therefore recently obtained shareholders' approval for a limited proportion of the Company's assets to be available for investment in this specialised area of health science, without prejudicing the Company's fundamental long-term commitment to biotechnology.

INVESTMENT POLICY

The Company was established to allow investors to participate in one of the major technological revolutions of the twentieth century. It raised US$46m. in June, 1981, mainly from UK institutional investors, and is the leading investment company specialising in biotechnology. Its investment objective is long-term capital appreciation by investing in quoted and unquoted companies anywhere in the world that are involved in any aspect of biotechnology or, to a certain degree, health science. The balance of the Company's assets between quoted and unquoted investments depends on the availability of suitable opportunities but it has always been the intention that the greater part of the assets will be invested in securities which are initially unquoted. These have been, and are likely to continue to be, venture capital investments which involve taking equity stakes either in new companies or in those at an early stage of development. These companies should not be expected to produce significant profits for several years and may well require additional funding during the course of their development.

No investment will represent, at the time that it is made, more than 20 per cent. (and in normal circumstances more than 10 per cent.) of the Company's net assets. It is the Company's normal policy to purchase not more than 20 per cent. of the equity of any company.

The evaluation of unquoted investment proposals is carried out with the assistance of five eminent scientists who have been retained by the Company as consultants. Additional consultants are likely to be appointed. Reports are also commissioned from other experts when necessary. The evaluation is based on the following criteria. First, the company under review should not only employ scientists of high calibre but also first-rate business managers able to develop a successful commercial venture. Secondly, the company's business plan should clearly define its research and product areas and contain both a market analysis and a realistic assessment of the competition. Thirdly, there must be a potential rate of return in line with the risk taken, the Company's intention being to seek a much higher than average return on each unquoted investment within three to seven years from the date of investment. Fourthly, if an investment is to be made by the Company in conjunction with other investors, one member of the investing group should have the responsibility of monitoring the venture. In some cases the Company has played this role. Lastly, there must be a prospective method of realising the investment. This would normally be through a public share issue.

It is the Company's general policy to retain an investment in companies which have obtained a public quotation, provided that adequate future growth is envisaged. The Company takes an active part in the affairs of the unquoted companies in which it has invested, including, in many cases, representation at board level. It does not, however, seek either managerial or legal control of any company in its portfolio.

REASONS FOR THE OFFER

Since it was established, the Company has received more than 200 proposals for investment in unquoted companies and a number of these are currently under review. The Directors expect there to be a continuing flow of investment proposals and feel that it is in the Company's interest to raise further capital in order to be in a position to take advantage of these opportunities, while retaining sufficient liquidity to provide for possible further investment in existing portfolio companies.

RISK FACTORS

While rapid changes in science and technology present attractive opportunities for investment in companies in the fields described above, special risks are often associated with such companies. They may spend a substantial part of their resources on research and development (which may be commercially unproductive), or require the injection of further funds to exploit the results of their work. New processes and products may not be commercially viable or may rapidly become obsolete. There is no assurance that these companies will eventually be profitable or that the valuation placed on their securities at the time of investment will be sustained by continuing investor demand.

It is a consequence of the investment policy referred to above that a significant proportion of the Company's investments are and will continue to be in companies whose securities are not publicly traded or freely marketable and may therefore be difficult to realise. Exchange rates are unpredictable and could have a significant impact on the value of the Company's investments. The marketing of many of the products manufactured by companies in which the Company has invested will require the continuing approval of regulatory bodies.

It must be emphasised, therefore, that investment in the Company should be regarded both as long-term and as carrying a high level of financial risk.

SUMMARY

The information set out below should be read in conjunction with the full text of the Prospectus.

INTRODUCTION

Biotechnology Investments Limited was formed in 1981 to enable investors to purchase shares in a company whose main objective was, and remains, investment in the rapidly developing area of biotechnology. The Company now has a portfolio of 37 investments with an aggregate value of US$49.6m. (£34.5m.) as at 20th March, 1984. This includes 19 unquoted or restricted investments representing 60.4 per cent. by value of the total portfolio. Investments in the USA comprise 60.4 per cent. by value of the portfolio, and those in the UK 12.7 per cent.

NET ASSET RECORD

Shares were initially issued by the Company in June, 1981 at US$10.00 per Share. The following table illustrates the subsequent movement in the Company's net asset value per share:—

	US$		US$
1981		1983	
30th November	10.39	31st May	13.50
1982		30th November	13.47
31st May	10.79	1984	
30th November	11.91	20th March	13.24 (£9.21)

A summary of the Net Asset Value per Share as at 20th March, 1984 is set out in Appendix C.

For the purposes of computing the Company's net asset value per share, the discount applied in respect of restricted investments on and before 30th November, 1983 was 33⅓ per cent. and not the current rate of 25 per cent. Further, the discount was applied in respect of the Company's entire holding of restricted investments and not just such part of the holding as comprised restricted shares (see note below on restricted investments under the heading "Existing Portfolio"). If the latter discount had been applied on 30th November, 1983 and only to the restricted shares, the net asset value per share on such date would have been US$13.73. The effects on the net asset value per share in previous periods are not considered material.

OFFER STATISTICS

The Offer for Subscription is being made at a price determined by reference to the sterling equivalent of the Net Asset Value per Share as at 20th March, 1984 after provision for the payment of an interim dividend on 31st May, 1984. The calculation of the Net Asset Value has been prepared by the Managers on the basis of the guidelines set out in the paragraph headed "Valuation of Investments" but no assurances are given that the Company's assets could have been realised at such values on such date. The Company's Auditors have reviewed the procedures applied by the Managers in computing such Net Asset Value per Share and have inspected the underlying documentation.

Offer Price	£9.15
Net Asset Value per Share as at 20th March, 1984	US$13.24 (£9.21)
Net Asset Value per Share as at 20th March, 1984 (adjusted for interim dividend)	US$13.14 (£9.14)
Net Asset Value per Share as at 20th March, 1984 (adjusted for the issue and interim dividend)	US$13.00 (£9.05)

RISK FACTORS

Attention is drawn to the paragraph headed "Risk Factors" below. It must be emphasised that investment in the Company should be regarded both as long-term and as carrying a high level of financial risk.

PROCEEDS OF THE ISSUE

The net proceeds of the issue are estimated to be US$25,350,000, assuming that the ¼ per cent. commission referred to in "Procedure for Application" below is paid in respect of all subscriptions for Shares. The proceeds will be used to further the Company's investment activities.

CURRENCY OF ACCOUNTS

The Company draws up its financial statements in dollars, its principal operating currency.

EXCHANGE RATES

Except as otherwise expressly stated, for the purpose of calculating the Offer Price and in stating currency equivalents in the Prospectus, currency has been translated at £1.00 = US$1.437, being the spot exchange rate quoted in London at the close of business on 20th March, 1984.

PREFERENTIAL APPLICATIONS

Preference will be given to applications from shareholders of the Company on the Register at the close of business in Guernsey on 28th March, 1984 for up to a total of 400,000 Shares (representing 20 per cent. of the Shares being offered for subscription).

TIMETABLE

Subscription lists open	12th April, 1984
Basis of allotment announced	13th April, 1984
Letters of allotment despatched	18th April, 1984
Dealings commence	19th April, 1984
Last day for splitting	13th June, 1984
Last day for registration of renunciation	15th June, 1984
Definitive share certificates despatched	13th July, 1984

EXISTING PORTFOLIO

Some 60.4 per cent. by value of the existing portfolio of 37 investments are in the USA and 12.7 per cent. in the UK. Brief details of the Company's investment portfolio are set out in Appendices A and B.

The following table categorises the investments currently held by the Company by marketability and geographical location:—

	Valuation as at 20th March, 1984 US$	£	Percentage by value %
Quoted			
US	6,297,625	4,382,481	12.7
Other	13,322,034	9,270,726	26.9
Unquoted			
US	12,596,949	8,766,144	25.4
UK	6,301,027	4,384,848	12.7
Restricted*			
US	11,071,663	7,704,706	22.3
Total			
US	29,966,237	20,853,331	60.4
UK	6,301,027	4,384,848	12.7
Other	13,322,034	9,270,726	26.9

Since the Company commenced business in June, 1981 it has invested in 18 unquoted companies and one restricted investment. Five of these unquoted companies in the USA have subsequently obtained stock market quotations and are now restricted investments. Details of these five companies are set out below:—

Company	Date of Purchase	Cost US$	Date of Initial Public Offering	Valuation as at 20th March, 1984 US$
Amgen, Inc.	June, 1981	515,001	June, 1983	768,984
Applied Biosystems, Inc.	Sept., 1981	700,625	June, 1983	4,530,488
DNA Plant Technology Corporation	April, 1982	999,025	Jan., 1984	1,065,624
Immunex Corporation	Oct., 1982	752,302	July, 1983	1,236,820
Integrated Genetics, Inc.	Feb., 1982	1,000,000	July, 1983	1,105,247

*Note: A restricted investment is an investment in the shares of a US company which has become publicly quoted but where all or part of the Company's holding of such investment is subject to restrictions on sale. The shares subject to such restrictions ("restricted shares") are valued at a discount (currently 25 per cent.) to the bid price of fully marketable shares of that company. Since this discount is applied only to the restricted shares, the overall discount applied to the restricted investment will be less than 25 per cent. to the extent that the holding comprises shares which are not so restricted.

PRO-FORMA STATEMENT OF NET ASSETS

A pro-forma statement of the net assets of the Company as at 20th March, 1984, adjusted to take account of the net proceeds of the issue and the interim dividend, is set out below:—

	US$	US$
Investments		
Quoted, at market value	19,619,659	
Unquoted and restricted, at Directors' valuation	29,969,639	49,589,298
Current assets		
Debtors and prepayments	232,440	
Certificates of deposit and bonds	10,177,048	
Bank balances	27,659,532	
	38,069,020	
Current liabilities		
Creditors and accrued charges	387,887	
Interim dividend	460,000	
	847,887	
Net current assets		37,221,133
Preliminary and listing expenses less amount amortised		39,282
		86,849,713
Deferred liability		
Incentive fee		1,061,887
		85,787,826
Financed by:—		
Share capital		132,000
Reserves		
Share premium	71,216,000	
Capital reserve	10,689,822	
General reserve	3,748,004	
		85,655,826
		85,787,826

DIVIDEND POLICY

The Company's income consists of interest on funds deposited pending investment and dividends received from portfolio companies. The Company's policy is to distribute the whole of this income after making provision for expenses and for reserves to prevent undue fluctuation in the level of dividend from year to year. For the period ended 31st May, 1982 income available for distribution was US$576,481 and for the year ended 31st May, 1983 it was US$658,734. In both periods a dividend of 10 cents per share was declared at an annual cost to the Company of US$460,000. An interim dividend in respect of the year ending 31st May, 1984 of 10 cents per share, also costing US$460,000, has been declared and will be paid on 31st May, 1984 to shareholders on the register at the close of business in Guernsey on 28th March, 1984. It is not intended that any further dividend will be paid in respect of the year ending 31st May, 1984.

Save as aforesaid, dividends are usually paid in September of each year. The first dividend in respect of the enlarged share capital is expected to be paid in September, 1985. The Directors intend that the dividend policy described above will be maintained in subsequent years. However, as the Company's funds become more fully invested in securities which pay little or no dividend, it is anticipated that the level of dividend paid to shareholders will fall.

MANAGEMENT AND OPERATIONS

The members of the Board of Directors, all of whom are non-executive, are as follows:—

Lord Rothschild (aged 73 years) (Chairman) is a non-executive Director of N. M. Rothschild & Sons Limited. He was formerly Research Co-ordinator of the Royal Dutch/Shell Group and Director General of the Central Policy Review Staff of the Cabinet Office. He is also a Fellow of the Royal Society.

James Blair (aged 44 years) is a Managing Director of Rothschild Inc., where he has been involved in venture capital investment for six years including three years in biotechnology venture capital investments.

Sir Edwin Leather (aged 64 years) is a former Governor of Bermuda and an executive Director of N. M. Rothschild Services (Bermuda) Limited.

David Leathers (aged 41 years), a Chartered Accountant, is an executive Director of N. M. Rothschild Asset Management Limited, with whom he has been an investment manager for eleven years. He has been actively involved in biotechnology venture capital investment for the last three years.

Donald Lines (aged 52 years) is Chief General Manager of The Bank of Bermuda Limited and a Director of Bermuda Shield Trustee Company Limited.

Nicolas McAndrew (aged 49 years) is a Managing Director of N. M. Rothschild & Sons Limited, the Managing Director of N. M. Rothschild Asset Management Limited, Chairman of N. M. Rothschild Asset Management (C.I.) Limited and a Director of Rothschild Inc.

David Padwa (aged 52 years) is Chairman of Agrigenetics Corporation, of Boulder, Colorado, USA.

Edward Ziff (aged 41 years) is Professor of Biochemistry at New York University Medical Centre and is one of the Company's consultants.

The overall responsibility for the management of the Company and for determining and reviewing the Company's investment policy is vested in the Directors.

Biotechnology Investments Limited *continued*

The Company has appointed N. M. Rothschild Asset Management (C.I.) Limited (the "Managers") to manage the investments of the Company and to undertake the Company's administration (subject to the overall supervision and control of the Directors) and to act as its Registrar. The Managers act as the managers of substantial unit trusts and other similar funds in Guernsey.

The Company has appointed N. M. Rothschild Asset Management Limited (the "Investment Advisers") as advisers to the Company and the Managers as to the investment and reinvestment of the Company's investment portfolio. The Investment Advisers have wide experience in the field of investment management and strong international connections. Funds under management by the Investment Advisers as at 31st December, 1983 totalled approximately £3,000m.

The Company has appointed Rothschild Inc. ("RINC") to advise on venture capital investments in the USA and, if requested, in other areas. RINC and its predecessors have been active in venture capital and special situation investment for over thirty-five years, during which period advice has been given on venture capital investments exceeding US$200m. in over 100 companies.

RINC acts as investment adviser to other funds which are engaged in venture capital investment (though not in such a specialised field as the Company) and may co-ordinate the investment of the Company's assets with investments made by such other funds. However, in such circumstances, the Company has the option to acquire up to 50 per cent. of the securities in biotechnology companies made available for investment by the funds which RINC advises. RINC, its affiliates and their respective managements may also participate in investments in portfolio companies. The services of the Managers, the Investment Advisers and RINC are provided pursuant to agreements, details of which are given in Sections 3(i), (ii) and (iii) of "General Information" below. Further information on the Managers, the Investment Advisers and RINC is given in Sections 7, 8 and 9 of "General Information" below.

PREPARATION OF REPORTS AND ACCOUNTS

The audited accounts of the Company are prepared annually to 31st May. Half-yearly reports are published in respect of the period to 30th November in each year. Copies of all reports and accounts are sent to shareholders.

MEETINGS

The General Meeting of the Company is held annually in Guernsey. Notice convening this General Meeting is forwarded to shareholders, together with the annual report and accounts of the Company, normally in July or August of each year and in any event giving not less than 21 days' notice of the Meeting.

MANAGEMENT FEES AND EXPENSES

The Company pays the following fees to the Managers:—

(a) 1½ per cent. per annum, payable semi-annually, of the value of the net assets of the Company.

(b) An incentive fee equal to 20 per cent of any net increase in the value of the Company's unquoted investments during an accounting period, after taking into account any net reduction in value carried forward from preceding accounting periods. Investments which, when acquired, were unquoted but subsequently become quoted on a stock exchange will continue to be treated as unquoted for the purpose of calculating the incentive fee, unless quotation occurs within six months of the date of acquisition. Such incentive fee will be calculated and will accrue on each balance sheet date but will only become payable when there are sufficient liquid resources. No incentive fee will, in any case, be paid before the end of the fifth financial year of the Company (31st May, 1986) and thereafter the fee will only become payable when the net asset value per share (after taking into account such accrued fee) has exceeded US$15. In any event, only 50 per cent. of such accrued fee will be paid, the balance being carried forward to the following year. This amount will be available to offset the effect on the incentive fee of any future net reduction in the value of the Company's unquoted investments or as an addition to any amount of incentive fee calculated for that year, when 50 per cent. of the aggregate of such amounts will be payable, the balance being carried forward on the same basis.

The Managers are responsible for paying the fees of the Investment Advisers and RINC (the Venture Capital Advisers), and the fees of Rothschilds in connection with their appointment to advise on unquoted investments in the United Kingdom and Europe and to undertake financial appraisals (see Section 3(vi) of "General Information" below).

The Company bears the out-of-pocket expenses of the Managers, the Investment Advisers and RINC. In addition, the Company bears all other operating expenses and brokerage, including the fees and expenses of the Directors, the Secretary, the Custodian, the Auditors, the consultants and the members of the Valuation Advisory Board (see below).

Further information on fees and expenses is given in Section 4 of "General Information" below.

VALUATION OF INVESTMENTS

Valuations are prepared in accordance with the following guidelines (which are not intended to be exhaustive):—

(a) *Quoted investments*
Fully marketable shares listed or dealt in on a national securities or stock exchange or the US over-the-counter market, are valued at the bid price on such exchange or market.

(b) *Unquoted investments*
These are initially valued at cost. A reduction in the valuation of an unquoted investment is made if considered appropriate in the light of a company's condition or prospects. Increases in value are in normal circumstances only made if substantiated by significant transactions in the relevant company's shares by third parties.

(c) *Restricted investments*
A restricted investment may consist wholly of restricted shares (as defined in the note to the paragraph headed "Existing Portfolio") or partly of restricted shares and partly of shares that are not subject to restrictions on sale. Restricted shares are currently valued at a discount of 25 per cent. to the bid price of marketable shares in the relevant company. Shares in such a company which are not subject to restrictions on sale are valued on the same basis as described in (a) above.
The discount applied has been reduced from 33⅓ per cent. to 25 per cent. since 1st December, 1983 with the approval of the independent Valuation Advisory Board (referred to below) as this is now considered to be the appropriate discount to be applied in valuing restricted shares in biotechnology companies.

(d) *Limited partnership interests*
These will initially be valued at cost until the Company has satisfied its investment commitment to the partnership. Thereafter, such interests will be valued by reference to the net asset value of the partnership.

(e) *Cash, certificates of deposit and bonds*
Cash is valued at its current dollar equivalent. Certificates of deposit and bonds are valued on the basis of the current yield of certificates of deposit and government bonds of similar size, credit status and maturity.

Investments denominated in currencies other than dollars are translated into dollars at the spot rate of exchange ruling on the valuation date.

The Managers are responsible for preparing valuations of the Company's investments for approval by the Directors. RINC, in their capacity as Venture Capital Advisers, provide the Investment Advisers and the Managers with recommended valuations for each of the unquoted and restricted investments held by the Company based upon the foregoing guidelines, subject to such adjustments as may be applicable in particular circumstances. These valuations are reviewed by members of an independent Valuation Advisory Board appointed by the Directors. The members of the Valuation Advisory Board are regarded by the Directors as having expertise in the valuation of unquoted investments as a result of their experience in finance and industry. The Directors, having regard to the recommendations of the above-mentioned parties, value the investments, and their valuation, together with the other information provided by the Managers, forms the basis of the half-yearly and annual accounts.

BORROWINGS

The Directors do not envisage making use of the borrowing powers available to the Company, detailed in Section 6 of "General Information" below, save in exceptional circumstances, or as a means of acquiring an investment denominated in a currency other than dollars when the appropriate currency may be borrowed against the deposit of an equivalent amount in dollars.

TAXATION – THE COMPANY

The Company has not incurred, and it is not expected that the Company will incur, any tax in Guernsey other than Guernsey corporation tax, the current rate of which is £300 per annum.

The Directors seek to procure the conduct of the affairs of the Company so as to ensure that it will not become resident in the UK and that it would not be deemed to be a close company if it were so resident.

Investment income received by the Company is subject to any withholding tax deducted in the relevant country of source.

Under the US Foreign Investment in Real Property Tax Act ("FIRPTA"), the Company may be liable to US taxation at a maximum rate of 28 per cent. on a disposal of its investment in a US corporation if at any time during the five years prior to the disposition more than 50 per cent. in value of the US corporation's business assets consisted of US "real property" (as defined in FIRPTA). While the Company does not intend to invest in companies that invest principally in US real property, the provisions could apply, for example, to an investment in a company that owns real property for use in its business activities.

It is possible that FIRPTA may require non-public reports to be filed by the Company disclosing the identity of some of its larger shareholders. The rules governing such reports have not been finalised, but the Company intends to take all reasonable steps available to avoid such disclosures.

TAXATION – THE SHAREHOLDERS

Shareholders (other than residents of Guernsey, Alderney and Herm) are not subject to any tax in Guernsey in respect of any Shares owned by them. Guernsey income tax is, however, deducted from dividends payable in respect of Shares held by or on behalf of residents of Guernsey, Alderney or Herm. There is at present no Capital Gains Tax, Estate Duty or Capital Transfer Tax in Guernsey.

Clearance has been obtained from the Board of Inland Revenue of the UK under Section 464 of the Income and Corporation Taxes Act 1970 that the provisions of Section 460 of that Act (cancellation of tax advantages from certain transactions in securities) will not apply to the issue of Shares or subsequent disposals by shareholders (except in the case of a sale to a company in which the vendor has a substantial interest).

The attention of individuals ordinarily resident in the UK is drawn to Section 478 of the Income and Corporation Taxes Act 1970 and to Section 45 of the Finance Act 1981. These contain provisions for preventing avoidance of income tax by individuals by transactions resulting in the transfer of income to persons (including companies) abroad and may render them liable to taxation in respect of undistributed income and profits of the Company.

The Inland Revenue has issued details of provisions proposed to be enacted in the Finance Act 1984 which will have effect as from 1st January, 1984 and which will charge gains made by UK taxpayers on realisations of investments in certain offshore funds to tax at rates applicable to income. After consultation with the Inland Revenue, the Directors believe that this new legislation, when it is enacted, should not apply to the Company or its shareholders. In consequence, gains realised by UK taxpayers on disposals of Shares in the Company by way of a sale on The Stock Exchange or otherwise should continue to be charged to tax at the rates attributable to capital gains.

Further changes in the law are proposed which, with effect from 6th April, 1984, may subject certain UK companies to tax on the profits of companies, not so resident, in which they have an interest. The proposals will affect UK resident companies which are deemed to be interested in at least 10 per cent. of the profits of a non-resident company, which is controlled by UK residents and which does not implement full distribution policies. Although the position is not yet clear, the proposals may have a limited effect on any such UK resident company which holds Shares in the Company. The draft legislation is not directed towards the taxation of capital gains.

Prospective investors should ascertain from their professional advisers the consequences of acquiring, holding and disposing of Shares under the relevant laws of the jurisdictions to which they are subject, including the tax consequences and any exchange control requirements.

ACCOUNTANTS' REPORT

The following is a copy of a report received by the Directors from Peat, Marwick, Mitchell & Co., the Auditors and Reporting Accountants:—

20 Lefebvre Street,
St. Peter Port,
Guernsey,
Channel Islands

The Directors,
Biotechnology Investments Limited
and
N. M. Rothschild & Sons Limited

22nd March, 1984

Dear Sirs,

Biotechnology Investments Limited (the "Company") was registered in Guernsey on 16th April, 1981 and commenced business on 12th June, 1981.

We have examined the audited accounts of the Company for the period from 12th June, 1981 to 30th November, 1983.

The summarised revenue accounts and balance sheets set out below are based on the audited accounts of the Company after making such adjustments as we consider appropriate. No accounts of the Company have been prepared since 30th November, 1983.

In our opinion these summaries, which have been prepared on the basis of the accounting policies set out below, together with the notes thereon, give a true and fair view of the state of affairs of the Company at 30th November, 1983, and of the net revenue of the Company for the periods stated.

As referred to in Note 1(g), the Accounts do not include a statement of source and application of funds as required by International Accounting Standard No. 7 for the reasons stated therein, with which we concur.

REVENUE ACCOUNTS	6 months to 30th November, 1983 US$	Year ended 31st May, 1983 US$	12th June, 1981 to 31st May, 1982 US$
Revenue (Note 1)			
Dividends receivable	33,212	86,099	38,624
Interest receivable	992,042	2,182,405	1,960,691
	1,025,254	2,268,504	1,999,315
Expenses (Note 2)			
Management fee	539,390	1,080,723	876,278
Custodian fee	46,234	92,633	75,110
Secretarial fee	500	1,000	1,000
Directors' fees	15,728	37,578	36,127
Auditors' remuneration	2,916	6,410	3,580
Consultants' fees	23,061	38,852	133,459
Guernsey corporation tax	437	481	990
Other expenses	53,440	152,708	96,604
	681,706	1,410,085	1,223,148
Net revenue after taxation	343,548	858,419	776,167
Amortisation of preliminary and listing expenses (Note 1)	99,843	199,685	199,686
Carried forward	243,705	658,734	576,481

	6 months to 30th November, 1983 US$	Year ended 31st May, 1983 US$	12th June, 1981 to 31st May, 1982 US$
Brought forward	243,705	658,734	576,481
Dividend	—	460,000	460,000
	243,705	198,734	116,481
Balance brought forward	315,215	116,481	—
	558,920	315,215	116,481
Earnings per share (Note 3)	5 cents	19 cents	17 cents
Dividend per share	—	10 cents	10 cents

BALANCE SHEETS	30th November, 1983 US$	US$	31st May, 1983 US$	US$
Investments (Note 1)				
Quoted, at market value (Note 4)	20,785,867		19,115,676	
Unquoted and restricted, at Directors' valuation (Note 5)	26,879,884		14,549,386	
		47,665,751		33,665,062
Current assets				
Debtors and prepayments	119,526		2,291,715	
Certificates of deposit and bonds (Note 1)	13,208,828		23,714,113	
Bank balances	2,397,024		3,835,402	
	15,725,378		29,841,230	
Current liabilities				
Creditors and accrued charges	651,167		826,973	
Proposed dividend	—		460,000	
	651,167		1,286,973	
Net current assets		15,074,211		28,554,257
Preliminary and listing expenses less amount amortised		99,843		199,686
		62,839,805		62,419,005
Deferred liability				
Incentive fee (Note 8)		861,850		330,358
		61,977,955		62,088,647
Financed by:—				
Share capital (Note 6)		92,000		92,000
Reserves				
Share premium (Note 7)	45,908,000		45,908,000	
Capital reserve (Note 8)	11,610,823		11,966,445	
General reserve (Note 9)	3,808,212		3,806,987	
Revenue account	558,920		315,215	
		61,885,955		61,996,647
		61,977,955		62,088,647
Net asset value per share		US$13.47		US$13.50

NOTES

1 ACCOUNTING POLICIES

(a) *Historical cost convention*
The accounts have been prepared under the historical cost convention adjusted where appropriate by the revaluation of investments.

(b) *Valuation of investments*
1. Quoted investments are valued at the bid price on a recognised stock exchange.
2. Unquoted investments are valued by the Directors on the recommendation of an independent Valuation Advisory Board. The Valuation Advisory Board is vested with the authority to recommend to the Directors valuations of the Company's unquoted and restricted investments. The policy followed by the Directors and the Valuation Advisory Board is to leave unquoted investments at cost unless there has been a clear indication that there has been a change in the company's situation. Cost in most instances will not necessarily reflect a direct interest in tangible assets of an investee company and may not therefore represent the amount which might ultimately be realised on disposal. Any increase in the valuation of unquoted investments is in normal circumstances only made if substantiated by significant third party transactions in the relevant shares. Any reduction in the valuation of an unquoted investment is made at the discretion of the Directors on the recommendation of the Valuation Advisory Board to reflect changed conditions within that company.
3. Restricted investments (i.e. investments which have obtained a US public quotation but where all or part of the Company's holding is subject to certain limitations on sale) are valued by the Directors, on the recommendation of the Valuation Advisory Board, at a discount to the bid price of marketable shares in the relevant company.
4. Limited partnership interests are valued at cost until the Company has satisfied its investment commitment to the relevant partnership. Thereafter, such an interest is valued by reference to the net asset value of the partnership.
5. Certificates of deposit and bonds are valued by the Directors in consultation with the Investment Advisers on the basis of the current yield of certificates of deposit and government bonds of similar size, credit status and maturity.

(c) *Determination of gains and losses on sale of investments*
The cost of investments sold is determined on an average cost basis for purposes of calculating gains or losses on sale.

(d) *Surpluses arising on certificates of deposit and bonds*
Surpluses arising from the disposal prior to maturity of short term investments in certificates of deposit and bonds are dealt with through general reserve.

(e) *Preliminary and listing expenses*
The initial preliminary and listing expenses which amounted to US$599,057 are being amortised over a period of three years from the date on which they were incurred and will be fully amortised by 31st May, 1984.

(f) *Revenue*
Dividends on investments and interest on bank deposits and bonds are included on a receivable basis. Interest on certificates of deposit is included where they are held to maturity.

(g) *Statement of source and application of funds*
A statement of source and application of funds, as required by International Accounting Standard No. 7, is not included in these Accounts. In the opinion of the Directors, such a statement has little relevance to this Company.

(h) *Foreign currency translation*
Assets and liabilities expressed in foreign currencies are translated into US$ at the rate of exchange ruling at the Balance Sheet date. Revenue Account items are translated into US$ at the rate ruling at the time of the transaction.

2 EXPENSES OF MANAGEMENT

(a) *Management fee*
Under an agreement dated 19th May, 1981, as amended, N. M. Rothschild Asset Management (C.I.) Limited were appointed as the Managers, subject to the overall supervision of the Directors and with powers of delegation, to manage the Company's administrative affairs, to act as its Registrar and to manage the Company's investments. The Agreement contains provisions [illegible].

(b) *Custodian fee*
Under an agreement dated 19th May, 1981, as amended, N. M. Rothschild & Sons (C.I.) Limited was appointed as the Custodian to be responsible for the custody of the Company's investments.

3 EARNINGS PER SHARE

The calculation of earnings per share is based on net revenue after taxation (before amortisation of preliminary and listing expenses) and 4,600,000 Ordinary Shares of 2 cents each in issue.

4 QUOTED INVESTMENTS

At 30th November, 1983 the Company held 18 quoted investments with an aggregate market value of US$20,785,867.

5 UNQUOTED AND RESTRICTED INVESTMENTS

The Company held the following unquoted and restricted investments at 30th November, 1983:—

Company	Holding and Class of Stock	Cost US$	Valuation at 30th November, 1983 US$	Equity interest in company %
Advanced Mineral Technologies, Inc.	250,000 Convertible Preferred	250,000	250,000	25.0
Agrigenetics Corporation	124,627 Common	1,434,807	1,246,270	1.2
Amgen, Inc.*	128,750 Common	515,001	595,486	1.1
Applied Biosystems, Inc.*	295,000 Common	700,625	3,508,288	5.8
Catalytica Associates, Inc.	571,430 Convertible Preferred	1,000,002	1,000,002	10.4
Celltech Limited	1,780,000 Ordinary	5,017,654	4,565,700	11.1
CW Ventures	Limited partnership interest	333,334	333,334	3.1
DNA Plant Technology Corporation	355,208 Common	999,025	999,025	2.9
Genetic Systems Corporation*	450,000 Common	900,000	2,939,625	2.3
Genzyme Corporation	274,063 Convertible Preferred	999,997	999,997	3.5
Immunex Corporation*	300,320 Common	752,301	1,307,894	3.8
Integrated Genetics, Inc.*	300,000 Common	1,000,000	1,206,000	3.6
International Plant Laboratories, Inc.	13,300 Common	567,000	567,000	5.1
Plant Genetics, Inc.	487,500 Convertible Preferred	1,950,000	1,950,000	9.0
Quest Systems, Inc.	40,000 Convertible Preferred	300,000	300,000	6.0
Repligen Corporation	250,000 Series 'A' Convertible Preferred	2,012,500	3,325,000	7.5
	105,300 Series 'B' Convertible Preferred	1,080,350	1,080,350	2.2
WMC (Resource Recovery) Limited	702,500 Ordinary	598,400	587,025	25.0
		[illegible]	26,879,884	

A discount of 33⅓ per cent. was applied to the Company's holdings in restricted investments (marked with an asterisk) which had gone public at 30th November, 1983 but were subject to limitations on sale.

Since 1st December, 1983, the Directors (with the approval of the independent Valuation Advisory Board) have decided to reduce the discount applied in respect of restricted investments from 33⅓ per cent. to 25 per cent. The latter is now considered to be the appropriate discount to be applied in valuing restricted shares in biotechnology companies. On and before 30th November, 1983 the discount was applied in respect of the Company's entire holding of restricted investments and not just such part of the holding as comprised restricted shares. Had the discount of 25 per cent. been applied at 30th November, 1983 and only to the restricted shares, the net asset value per share would have been US$13.73. The effect of the change of discount on the net asset value per share at 31st May, 1983 is not considered to be material.

With the exception of the investment in CW Ventures, the equity interest represents the proportion of the share capital of each investment owned by the Company on a fully diluted basis.

All investments owned by the Company are either in the form of equity or are convertible into equity and the percentage interest is based on the exercise of all conversion and subscription rights by the Company and other parties. The investment in CW Ventures is in the form of a limited partnership interest where there is a commitment to invest an additional US$666,666. The percentage interest in CW Ventures is based on the *full payment of this additional commitment* by the Company and the other partners.

The shares in Agrigenetics were still unquoted at 30th November, 1983, but a preliminary registration statement was filed shortly after that date with the US Securities and Exchange Commission indicating a price range for a proposed initial public offering of US$13-16 per share. The Directors therefore valued the investment in Agrigenetics at US$10 per share taking into account such proposed public offering. The shares in Agrigenetics are still unquoted at the date of this Report.

The reduction in the value of the holdings in Celltech and WMC (Resource Recovery) solely reflect exchange rate movements between the respective purchase dates and 30th November, 1983.

6 SHARE CAPITAL

	30th November, 1983 US$	31st May, 1983 US$
Authorised		
6,250,000 Ordinary Shares of 2 cents each	125,000	125,000
Issued and fully paid		
4,600,000 Ordinary Shares of 2 cents each	92,000	92,000

7 SHARE PREMIUM

	30th November, 1983 US$	31st May, 1983 US$
Premium on initial issue of Ordinary Shares	45,908,000	45,908,000

8 CAPITAL RESERVE

	Gain on disposal of quoted investments US$	Unrealised appreciation on quoted investments US$	Unrealised appreciation on unquoted investments US$	Incentive fee US$	Total US$
Movements during period ended 31st May, 1982	229,196	284,716	730,166	(149,233)	1,094,845
Movements during year ended 31st May, 1983	142,581	6,988,520	3,921,624	(181,125)	10,871,600
Balance at 31st May, 1983	371,777	7,273,236	4,651,790	(330,358)	11,966,445
Movements during period ended 30th November, 1983	—	(1,521,216)	1,697,086	(531,492)	(355,622)
Balance at 30th November, 1983	371,777	5,752,020	6,348,876	(861,850)	11,610,823

Under an agreement dated 19th May, 1981, as amended, N. M. Rothschild Asset Management (C.I.) Limited receives an incentive fee based on the appreciation (less depreciation) of the Company's unquoted investments during an accounting period. The incentive fee provided above is due for payment on 31st May, 1986 or on any subsequent 31st May provided that the net asset value per share of the *Company at that time is not less than US$15 after accruing the incentive fee. At such time as the fee is due for payment only 50 per cent.* of such accrued fee will be paid, the balance being carried forward to the following year.

9 GENERAL RESERVE

	Gain on disposal of certificates of deposit and bonds US$	Unrealised appreciation on valuation of certificates of deposit and bonds US$	Total US$
Movements during period ended 31st May, 1982	1,240,495	1,161,230	2,401,725
Movements during year ended 31st May, 1983	1,999,139	(593,877)	1,405,262
Balance at 31st May, 1983	3,239,634	567,353	3,806,987
Movements during period ended 30th November, 1983	297,384	(296,159)	1,225
Balance at 30th November, 1983	3,537,018	271,194	3,808,212

The balance on general reserve will be retained to meet future expenses and to provide funds for the payment of dividends in circumstances where the Company's longer term investment policy results in a reduction of income in the short to medium term.

10 COMMITMENTS

The Company has an outstanding commitment to invest a further US$666,666 in CW Ventures, of which US$333,333 is due for payment on 13th April, 1984.

Yours faithfully,
Peat, Marwick, Mitchell & Co.
Chartered Accountants.

GENERAL INFORMATION

1 CORPORATE STRUCTURE

The Company was registered with limited liability in Guernsey on 16th April, 1981 under the provisions of the Companies (Guernsey) Laws, 1908 to 1973. The constitution of the Company is defined in its Memorandum and Articles of Association.

On incorporation, the Company had an authorised share capital of US$125,000 divided into 6,250,000 Shares of 2 cents each. In June, 1981, the Company issued 4,600,000 Shares of 2 cents each at US$10.00 per Share payable in two equal instalments of US$5.00 on 12th June, 1981 and on 27th November, 1981. All such Shares are now fully paid. The authorised share capital of the Company was increased by Ordinary Resolution, passed on 7th April, 1984, to US$150,000 divided into 7,500,000 Shares of 2 cents each.

2 ARTICLES OF ASSOCIATION

The Articles of Association of the Company (which were amended with effect from 1st March, 1984) contain provisions to the following effect:—

(a) *Appointments*

(i) The Directors may appoint managers and investment advisers of the Company's administrative affairs and the investment and reinvestment of the Company's investments and may entrust to and confer upon such managers or investment advisers any of the functions, duties, powers and discretions exercisable by them as Directors in relation thereto (other than the power to make calls or forfeit Shares) upon such terms and conditions including the right to remuneration payable by the Company and with such powers of delegation and such restrictions as they think fit and either collaterally with or to the exclusion of their own powers.

(ii) The terms of any contract or arrangement entered into by the Company appointing any managers or investment advisers (other than the original agreements entered into prior to the initial issue of Shares), and any variations made after the initial issue of Shares to any such contract or agreement then in force (including any such original agreement), shall be subject to approval by an Ordinary Resolution, PROVIDED THAT no such approval shall be required should—

(a) the terms of any new arrangement entered into for the appointment of new managers or investment advisers not differ materially from those in force with the former managers or investment advisers on termination of their respective appointments; or

(b) in the case of the variation to an existing agreement appointing any managers or investment advisers, the managers or investment advisers (as the case may be) consider that such variation is necessary or expedient having regard to the provisions of any legislation actual or proposed or the Company, the Auditors, the managers and the investment advisers each certify that such variation does not materially prejudice the interests of the holders for the time being of shares or any of them and does not operate to release the managers to any material extent from any responsibility to the Company.

(iii) The Directors may appoint a custodian to be responsible for the safe custody of any of the assets of the Company and to perform such other duties upon such terms as the Directors may determine. The remuneration of any such custodian shall be payable by the Company. The terms of appointment of any such custodian may authorise such custodian to appoint (with powers of sub-delegation) sub-custodians, nominees, agents or delegates at the expense of the Company or otherwise.

(iv) The Directors may appoint consultants to advise the Company in connection with the investment of funds by or on behalf of the Company and to perform such other duties upon such terms as the Directors may determine.

(b) *Share Capital*

(i) By Ordinary Resolution the Company may issue shares with any special rights that the Company may determine, without prejudice to the rights attaching to any existing shares. The Company may by Ordinary Resolution issue preference shares on such terms as before such issue the Company by Special Resolution may determine. If the share capital is divided into different classes of shares, rights attaching to a particular class may be varied only by a three-quarters majority of that class consenting.

(ii) The Board, unless the Company in General Meeting declares otherwise, shall have the ability to allot, grant options over or otherwise dispose of unissued shares on such terms as it sees fit.

(iii) The Company may by Ordinary Resolution increase its share capital by such sum to be divided into such amount as it so resolves. Before such issue the Company may resolve that the shares be offered to existing members pro rata, and otherwise the new shares may be dealt with as if they formed part of the original capital and not be subject to all existing provisions relating to the shares.

(c) *Rights as to Dividends*

(i) The Company in General Meeting may declare dividends to be paid out of the profits of the Company. Unless the rights and terms attached to any shares otherwise provide, all dividends shall be declared and paid according to the amount paid up on the shares in [illegible]

[illegible]

3 MATERIAL CONTRACTS

[illegible]

4 FEES AND EXPENSES

[illegible]

5 DIRECTORS

[illegible]

(iv) any proposal concerning any other company in which he has interests directly or indirectly and whether as an officer or shareholder or otherwise howsoever, provided that he (together with persons connected with him within the meaning of Section 64 of the Companies Act 1980 of Great Britain) is not the holder of or beneficially interested in 1 per cent. or more of the issued shares in any class of such company (or of any third company through which his interest is derived) or of the voting rights available to members of the relevant company (any such interest being deemed to be a material interest in all circumstances).

(c) Where proposals are under consideration concerning the appointment (including fixing or varying the terms of appointment) of two or more Directors to offices or employments with the Company or any company in which the Company is interested such proposals may be divided and considered in relation to each Director separately and in such cases each of the Directors concerned (if not debarred from voting under paragraph (b) (iv) above) is entitled to vote (and be counted in the quorum) in respect of each resolution except that concerning his own appointment.

(d) If any question shall arise at any time as to the materiality of a Director's interest or as to the entitlement of any Director to vote and such question is not resolved by his voluntarily agreeing to abstain from voting, such question is referred to the chairman of the meeting and his ruling in relation to any other Director is final and conclusive except in a case where the nature or extent of the interests of such Director has not been fairly disclosed.

(e) The Company may by Ordinary Resolution suspend or relax the provisions of paragraphs (a) to (d) inclusive above to any extent or ratify any transaction not duly authorised by reason of a contravention of those paragraphs.

(f) A Director may hold any other office or place of profit under the Company (other than the office of Auditor) in conjunction with his office of Director on such terms as to tenure of office, and otherwise as the Directors may determine, and no Director or intending Director shall be disqualified by his office from contracting with the Company either as vendor, purchaser or otherwise, nor shall any such contract or arrangement entered into by or on behalf of the Company in which any Director is in any way interested be liable to be avoided, nor shall any Director so contracting or being so interested be liable to account to the Company for any profit realised by any such contract or arrangement by reason of such Director holding that office or of the fiduciary relationship thereby established.

(g) Any Director may act by himself or through his firm in a professional capacity for the Company, and he or his firm shall be entitled to remuneration for professional services as if he were not a Director, provided that nothing herein contained shall authorise a Director or his firm to act as Auditor to the Company.

(h) Any Director may continue to be or become a director, managing director, manager or other officer or member of any company promoted by the Company or in which the Company may be interested or associated in business, and no such Director shall be accountable for any remuneration or other benefits received by him as a director, managing director, manager, or other officer or member of any such other company. The Directors may exercise the voting power conferred by the shares in any other company held or owned by the Company or exercised by them and directors of such other company, in such manner in all respects as they think fit (including the exercise thereof in favour of any resolution appointing themselves or any of them directors, managing directors, managers or other officers of such company, or voting or providing for the payment of remuneration to the directors, managing directors, managers or other officers of such company).

6 BORROWINGS

Under the Articles of Association of the Company the Directors may exercise the Company's powers to borrow and to charge its assets, but they are required to restrict the borrowing of the Company and to exercise all voting and other rights or powers of control exercisable by the Company in relation to its subsidiary companies (if any) so as to secure (as regards subsidiary companies so far as by such exercise they can secure) that the aggregate amount for the time being remaining undischarged of all moneys borrowed by the Group (which expression means and includes the Company and its subsidiaries for the time being), inclusive of any fixed or minimum premium payable on final repayment but exclusive of intra-Group borrowing, shall not, except with the consent of the Company in General Meeting, exceed an amount equal to the Share Capital and Consolidated Reserves (as defined in the Articles of Association). The expression "moneys borrowed by the Group" includes the principal amount of all debentures of any member of the Group which are not for the time being beneficially owned within the Group.

7 THE MANAGERS

The Managers, a wholly owned subsidiary of Rothschilds, were incorporated under the laws of Guernsey on 18th February, 1969. The Managers have their registered office at St. Julian's Court, St. Peter Port, Guernsey, Channel Islands. Their issued and paid-up capital is £100,000. The object of the Company is to provide a comprehensive management service to both corporate and individual clients.

8 THE INVESTMENT ADVISERS

The Investment Advisers, a wholly owned subsidiary of Rothschilds, were incorporated in England on 19th November, 1964. The Investment Advisers have their registered office at New Court, St. Swithin's Lane, London, EC4P 4DU. The Investment Advisers' issued and paid-up capital is £100,000 and the object of the company is to provide a comprehensive investment advisory and management service to both corporate and individual clients.

9 THE VENTURE CAPITAL ADVISERS

RINC was incorporated under its original name, New Court Securities Corporation, under the laws of the State of Delaware on 20th July, 1967. RINC has its registered office at 306 South State Street, Dover, Delaware, 19901, USA. The object of RINC is to provide investment banking facilities and management advice. RINC is an associated company of Rothschilds.

10 THE BANKERS AND CUSTODIAN

The Bankers and Custodian, a wholly owned subsidiary of Rothschilds, were incorporated under the laws of Guernsey on 6th June, 1967. Their registered office is at St. Julian's Court, St. Peter Port, Guernsey, Channel Islands. Their issued and paid-up capital is £1,000,000. The object of the Bankers and Custodian is to provide a full range of commercial banking and financial advisory services.

11 THE SECRETARY

Bermuda Shield Trustee Company Limited, the Secretary of the Company, is 40 per cent. owned by Rothschilds and 60 per cent. by The Bank of Bermuda Limited.

12 INDEMNITIES

The Articles of Association of the Company contain provisions indemnifying and exempting the Directors, Secretary and other officers and servants of the Company from liability in certain circumstances. They also provide that the Custodian, the Managers, the Investment Advisers and the Venture Capital Advisers shall be entitled to such indemnity from the Company under such terms and subject to such conditions and exceptions and with such entitlement to have recourse to the assets of the Company with a view to meeting and discharging the cost thereof as shall be provided under the Custodian Agreement, the Management Agreement, the Investment Advisory Agreement and the Venture Capital Advisory Agreement (as applicable).

13 LITIGATION

The Company is not engaged in any litigation and the Directors are not aware of any litigation or claims pending or threatened against the Company.

14 MISCELLANEOUS

(a) Except as disclosed in section 1 above:—

(i) no Shares have been issued within the two years immediately preceding the date of this document or are now proposed to be issued, fully or partly paid, either for cash or for a consideration other than cash; and

(ii) no commissions, discounts, brokerages or other special terms have been granted by the Company within the two years immediately preceding the date of this document in connection with the issue or sale of any Shares.

(b) No capital of the Company is under option or agreed conditionally or unconditionally to be put under option.

(c) No material issue of Shares (other than to shareholders *pro rata* to existing holdings), will be made within one year of the publication hereof without the prior approval of the Company in General Meeting. No issue will be made which would effectively alter the control of the Company or the nature of its business without the prior approval of the Company in General Meeting.

(d) None of the Directors of the Company has an interest in the share capital of the Company which would be required to be shown in the register maintained under the provisions of the Companies Act 1967 as amended of Great Britain if the Company were subject to the provisions of that Act. So far as the Directors are aware no person has an interest in 5 per cent. or more of the issued share capital of the Company.

(e) Except as disclosed herein, there has been no material change in the condition, financial or otherwise, of the Company since 30th November, 1983.

(f) Peat, Marwick, Mitchell & Co. have given and have not withdrawn their written consent to the issue of this document with their report included in the form and context in which it is included.

(g) The Company has appointed N. M. Rothschild & Sons (C.I.) Limited as its Bankers on the latter's normal banking terms for customers (as regards bank charges, interest and other matters). In addition, N. M. Rothschild & Sons (C.I.) Limited or any of its associated companies may act as its normal bankers in relation to the banking and foreign exchange transactions of the Company and retain any profits arising therefrom.

(h) The Company has not established a place of business in Great Britain. The Company has no subsidiaries.

(i) No change in the nature of the business of the Company is in contemplation.

(j) Out of the current total Directors' fees of approximately US$67,000 per annum, Lord Rothschild receives approximately US$14,000 and Sir Edwin Leather receives US$2,500 each. James Blair, Nicolas McAndrew and David Leathers receive US$2,500 each, but account for such fees to RINC (in the case of James Blair) and Rothschilds (in the case of Nicolas McAndrew and David Leathers).

(k) The Shares of the Company are currently listed on the Luxembourg Stock Exchange and from time to time dealings have taken place in London. The last bargains in London, before the calculation of the Net Asset Value per Share at 20th November, 1984, as recorded in The Stock Exchange Weekly Official Intelligence were on 7th March, 1984 when the lowest price was £11½. The middle market price quoted on the Luxembourg Stock Exchange on 20th March, 1984 was US$16⅞ (£11.70). Following the admission of the Shares of the Company to the Official List of The Stock Exchange, the Luxembourg Stock Exchange listing will be discontinued.

(l) The provisions of Sections 50 and 51 of the Companies Act 1948 of Great Britain (other than the penal provisions) so far as applicable (having regard to Section 419 of that Act) shall apply to the issue of Shares in pursuance of the Offer.

(m) The following directorships in portfolio companies are held by Directors:—

James Blair	Amgen, Inc., Applied Biosystems, Inc., Repligen Corporation
David Leathers	Celltech Limited (alternate), IQ (Bio) Limited, International Plant Laboratories, Inc.
David Padwa	Agrigenetics Corporation.

Any fees or benefits in respect of such directorships are accounted for to the Company and no Director has any direct or indirect interest in any portfolio company except that:—

(i) David Padwa receives a salary as Chairman of Agrigenetics Corporation, in which he also has a shareholding;

(ii) James Blair is a shareholder of Amgen, Inc. and Queue Systems, Inc.; and

(iii) Edward Zaff is a shareholder in Applied Biosystems, Inc.

(n) No amounts are required for the matters referred to in paragraph 4 of the Fourth Schedule to the Companies Act 1948 of Great Britain.

(o) None of the Directors has any direct or indirect interest in any assets which, during the two years immediately preceding the date hereof, have been acquired or disposed of by or leased to the Company or are proposed to be acquired or disposed of by or leased to the Company.

(p) Save as disclosed in the paragraph headed "Directors" above and in Section 3 of General Information none of the Directors has any direct or indirect interest in any contract or arrangement subsisting at the date hereof which is significant in relation to the business of the Company.

(q) The printing, accountancy, legal and other expenses of or incidental to the Offer including the fees for obtaining a listing on The Stock Exchange and the commission and fee payable to Rothschilds as mentioned in Section 3 (vii) above (but excluding the commission of ¼ per cent. payable to intermediaries in respect of acceptances) are expected to amount to approximately £440,000 and will be charged to the share premium arising on the issue or will be defrayed out of the existing resources of the Company.

(r) Save as disclosed in Sections 3(vi) and (vii), no amount has been paid or benefit given (or is proposed to be paid or given) to any promoter.

(s) There is no property purchased or acquired by the Company or proposed to be purchased or acquired, which is to be paid for wholly or partly out of the proceeds of this issue or the purchase or acquisition of which has not been completed at the date of issue of this Prospectus.

15 DOCUMENTS AVAILABLE FOR INSPECTION

Copies of the following documents may be inspected at the offices of Linklaters & Paines, Barrington House, 59-67 Gresham Street, London EC2V 7JA during usual business hours on weekdays (except Saturdays and public holidays) until 21st April, 1984:—

(a) the Memorandum and Articles of Association of the Company;

(b) the contracts listed in Section 3 above;

(c) the report of Peat, Marwick, Mitchell & Co. and their written consent;

(d) the Companies (Guernsey) Laws, 1908 to 1973;

(e) the Report and Accounts of the Company for the periods ended 31st May, 1982, 30th November, 1982, 31st May, 1983 and 30th November, 1983.

Dated 7th April, 1984

APPENDIX A

Brief details of the Company's Quoted Investments as at 20th March, 1984

Name of company	Brief description	Market value of holding US$
Ajinomoto Co., Inc. (Japan)	Fermentation products	1,254,000
Alfa-Laval AB (Sweden)	Fermentation and separation equipment	376,425
Biotechnology General Corp. (USA)	Biotechnology research and development	240,000
Becton, Dickinson and Co. (USA)	Diagnostic products	307,125
Cardo AB (Sweden)	Advanced plant breeding	2,446,233
Centocor, Inc. (USA)	Monoclonal antibodies for diagnostic use	787,750
Cetus Corporation (USA)	Biotechnology research and development	630,000
Flow General Inc. (USA)	Biomedical equipment and cell culture products	236,375
Genentech Inc. (USA)	Biotechnology research and development	1,940,625
Genex Corporation (USA)	Biotechnology research and development	463,750
Gist-Brocades N.V. (The Netherlands)	Industrial enzymes	278,981
Kyowa Hakko Kogyo Co., Ltd (Japan)	Fermentation products	873,600
LKB-Produkter AB (Sweden)	Separation and purification equipment	887,320
Millipore Corporation (USA)	Separation and purification equipment	1,122,000
Monoclonal Antibodies, Inc. (USA)	Diagnostic kits	281,250
New Brunswick Scientific Co., Inc. (USA)	Fermenter and fermentation control equipment	288,750
Novo Industri A/S (Denmark)	Insulin, industrial enzymes	2,971,125
Pharmacia AB (Sweden)	Diagnostic kits, separation and purification equipment	4,234,350
		19,619,659

Notes: (i) The brief description of the activities of the portfolio companies listed above relates to the areas of primary interest to the Company and does not necessarily represent the principal business of those companies.

(ii) The Company's interest in the issued share capital of any of the portfolio companies listed above does not exceed 5 per cent.

APPENDIX B

Brief details of the Company's Unquoted and Restricted Investments as at 20th March, 1984

Holding	Percentage of equity*	Cost	Valuation as at 20th March, 1984

ADVANCED MINERAL TECHNOLOGIES, INC.

250,000 Convertible Preferred Shares	25.0%	US$250,000	US$250,000
US$50,000 Demand Note	NA	US$50,000	US$50,000

AMT was formed in 1982 in Socorro, New Mexico to benefit from the expertise of Dr. Corale Brierley, who is a leading researcher into the application of biotechnological processes to the mining and pollution control industries. The Company provided initial funding of US$250,000 for the preparation of a detailed business plan. The initial product target has been selected as a water purification system which can absorb heavy metals onto micro-organisms and it is planned that the system should be available for test marketing during 1985. A secondary target is the development of microbial processes for the recovery of precious metals from ores which are either low-grade or difficult to leach. The Company has recently agreed to invest an additional US$500,000 in AMT.

AGRIGENETICS CORPORATION

124,627 Shares of Common Stock	1.2%	US$1,434,877	US$1,246,270

Agrigenetics, of which David Padwa, a Director of the Company, is Chairman, is a plant science company based in Boulder, Colorado that is engaged in research into, and in the development, production and marketing of, genetically-improved seeds and nitrogen-fixing bacteria. The company was formed in 1975 and has made a series of acquisitions within the US seed industry. It is now active in more than 50 crop species, is well established in many geographical regions in the USA and has a staff of more than 160 engaged in full-time research. Agrigenetics is the seventh largest seed company in the USA and had sales of US$89m. in the year ended 31st August, 1983. It applies both traditional plant breeding techniques and modern plant genetics at its seven research centres and nine plant breeding stations in the USA with the aim of developing crop species with superior properties such as disease resistance, drought tolerance, higher yield and increased nutritional value.

APPENDIX B continued

AMGEN, INC.

128,750 Shares of Common Stock	1.1%	US$515,001	US$768,984

Amgen, based near Los Angeles, is active in four main research areas: human therapeutics (principally alpha and gamma interferons); animal health care (vaccines and growth hormones); speciality chemicals (particularly those involving microbial oxidation of hydrocarbons); and diagnostics. In the latter area Amgen has a five year research contract dated May, 1983 with Abbott Laboratories, the world's leading diagnostics company, under which Amgen will receive approximately US$19m. over such period in exchange for exclusive world marketing rights. Amgen's first commercial products will emanate from the Abbott diagnostics programme. Therapeutic products closest to commercialisation are chicken growth hormone and a synthetic analogue of interferon which incorporates the main molecular features of the various sub-types of natural alpha interferon. This is claimed to show greater antiviral efficacy than any known natural alpha interferon. The company's shares are traded in the US over-the-counter market.

In the year ended 31st March, 1983, Amgen reported revenues of US$1.5m. (1982: US$2.7m.), including net interest income of US$1.4m. (1982: US$2.7m.), and a net loss before tax of US$7.1m. (1982: US$1.7m.). The company recently reported unaudited results for the nine month period ended 31st December, 1983 showing revenues of US$4.3m. including net interest income of US$2.3m. and a net loss before tax of US$3.4m.

APPLIED BIOSYSTEMS, INC.

295,000 Shares of Common Stock	5.8%	US$700,625	US$4,530,488

Applied Biosystems is an instrumentation and fine chemical company located near San Francisco which began operations in 1981 initially to manufacture and market an automatic protein sequencer and an automated DNA synthesiser, together with associated chemical reagents. A large number of laboratories involved in recombinant DNA research are likely to need both of these types of instruments as they permit the determination of the sequence of amino-acids in a protein (and so the possible DNA sequences coding for that protein) much more rapidly than was previously possible and the synthesis, quickly and reliably, of large numbers of DNA fragments. Applied Biosystems also provides a service in the custom synthesis of DNA fragments and is developing instruments for the synthesis of protein fragments and for the sequencing of DNA. The company is working with Genetic Systems (see below) on products with diagnostic applications, notably certain fluorescent dyes (based on technology licensed from Stanford University) which can be used as immunoassay labels. The company's shares are traded in the US over-the-counter market.

For the year ended 1st July, 1983, Applied Biosystems reported sales of US$5.9m. (1982: US$0.4m.) and net income before tax of US$0.2m. (1982: US$1.2m. loss). The company recently reported unaudited results for the six months ended 31st December, 1983 showing sales of US$7.5m. and net income before tax of US$2.1m.

CATALYTICA ASSOCIATES, INC.

571,430 Convertible Preferred Shares	10.4%	US$1,000,002	US$1,000,002

Catalytica was founded in 1974 and is involved in the field of catalysis, providing contract research and multiclient studies and managing joint venture projects with leading international chemical and petrochemical companies. Catalytica, which is based in Mountain View, California, has established a multi-disciplinary team of some 50 scientists, engineers and support staff, as well as highly sophisticated laboratory facilities. The main in-house research project aims to incorporate some of the molecular features of enzymes into organo-metallic catalysts for use in a number of commercially important chemical processes.

CELLTECH LIMITED

1,780,000 Ordinary Shares	11.1%	US$5,017,664	US$4,509,088

Celltech, based in Slough, was founded in 1980 and is the UK's leading specialist biotechnology company. It has a staff of 130 and is already earning revenues from the sale of reagents for blood-typing and for the purification of interferon. Celltech has a collaboration agreement with the UK Medical Research Council (MRC) whereby Celltech has certain rights to products and processes emerging from the MRC's research on recombinant DNA and monoclonal antibodies. Celltech signed an agreement in September, 1983 with Sankyo, Japan's second largest pharmaceutical company, for the development of two therapeutic agents, tissue plasminogen activator and calcitonin. The recently-formed joint venture with Boots (a listed UK pharmaceutical company) has launched its first two diagnostic kits.

CW VENTURES

Limited Partnership Interest	3.1%	US$333,334	US$333,334

CW Ventures is a US venture capital fund formed in July, 1982 by Channing, Weinberg & Company, Inc., a leading US firm of health care consultants. The fund raised US$32.5m (one third of which has so far been drawn down) for investment in health care companies primarily at an early stage of development. By 31st December, 1983 CW Ventures had reviewed 539 investment proposals and had made investments totalling approximately US$5.1m. in ten companies. The Company has an outstanding commitment to invest a further US$666,666 in CW Ventures, of which US$333,333 is due for payment on 13th April, 1984.

DNA PLANT TECHNOLOGY CORPORATION

355,208 Shares of Common Stock	2.9%	US$999,025	US$1,065,624

DNAP, whose main facilities are in Cinnaminson, New Jersey, is an agricultural biotechnology company. Dr. Sharp and Dr. Evans, the chief scientists, were former employees of Campbell Soup and have particular expertise in plant tissue culture and protoplast fusion. The company is undertaking research in a variety of areas (tomatoes, tropical plants, carrots, etc.) for many large multinational companies such as Campbell Soup, General Foods, BAT Industries and Hershey. The company is engaged in the development and marketing of plant-related consumer and industrial products. A joint venture with Koppers was recently announced for the development and commercialisation of diagnostic kits for plant disease. The company's shares are traded in the US over-the-counter market.

In the year ended 31st December, 1982 DNAP reported revenues of US$1.2m. (1981; Nil), including net interest income of US$1.0m. (1981; Nil) and a net loss before tax of US$0.4m. (1981: US$0.1m.). The company recently reported unaudited results for the year ended 31st December, 1983 showing revenues of US$1.5m., including net interest income of US$0.9m., and a net loss before tax of US$1.1m.

GENETIC SYSTEMS CORPORATION

450,000 Shares of Common Stock	2.3%	US$900,000	US$2,362,500

Genetic Systems of Seattle is an important company in the application of monoclonal antibodies to the diagnosis and treatment of human diseases. One of the company's major areas of product development is the diagnosis of infectious diseases including herpes simplex, gonorrhoea, chlamydia and syphilis. The first three such tests (for chlamydia and herpes simplex) are already being marketed in the USA by Syva, the diagnostic subsidiary of Syntex, the US pharmaceutical company. Other areas of research by the company include: (i) the diagnosis and treatment of infections caused by antibiotic-resistant bacteria in patients suffering from burns; (ii) tissue and blood typing for transplants and transfusions; and (iii) the diagnosis and treatment of cancer. The last area of research is the subject of a partnership with Syntex called Oncogen. The company's shares are traded in the US over-the-counter market.

In the year ended 31st December, 1982 Genetic Systems reported revenues of US$2.2m. (1981; US$0.3m.) and a net loss before tax of US$1.0m. (1981: US$0.4m. loss). The company's recently reported unaudited results for the year ended 31st December, 1983 showing revenues of US$3.9m. and a net loss before tax of US$1.5m.

GENZYME CORPORATION

274,062 Convertible Preferred Shares	5.5%	US$999,997	US$999,997

Genzyme is based in Boston, but has its principal activities in the UK following the acquisition of two UK companies, Whatman Biochemicals, a producer of industrial and diagnostic enzymes, and Koch-Light Laboratories, a manufacturer of fine chemicals for laboratory use. Genzyme intends to use these two acquisitions as a base for developing its interests in biotechnology in collaboration with a multi-disciplinary group of professors at Harvard University and the Massachusetts Institute of Technology.

IMMUNEX CORPORATION

300,320 Shares of Common Stock	5.0%	US$752,302	US$1,238,820

Immunex was formed in Seattle in July, 1981 to apply cellular immunology and recombinant DNA technology to the development of new types of diagnostic and therapeutic products for the treatment of cancer and other diseases. Initial research has been focussed on specific hormones within the immune system called lymphokines. The company's most advanced therapeutic product is interleukin-2 ("IL-2"), a lympholcine which could significantly enhance the body's latent defences against disease. The company has a research contract with and licences with Hoffmann-La Roche for the development, manufacture, clinical testing and marketing of IL-2. The company's shares are traded in the US over-the-counter market.

For the year ended 31st December, 1982 Immunex reported revenues of US$1.1m. and a net loss before tax of US$0.9m. The company recently reported unaudited results for the year ended 31st December, 1983 showing revenues of US$1.7m. and a net loss before tax of US$1.9m.

INTEGRATED GENETICS, INC.

300,000 Shares of Common Stock	3.6%	US$1,000,000	US$1,105,247

Integrated Genetics was founded near Boston in February, 1981 and is involved in the application of recombinant DNA technology to therapeutic and diagnostic products. The latter all involve DNA hybridisation probes, an emerging diagnostic technique which utilises labelled fragments of synthetic DNA to detect or identify specific gene sequences. Integrated Genetics has developed prototype tests for salmonella (for use in the food processing industry), cytomegalovirus and hepatitis B and is working on a genetic screening test for cystic fibrosis. The salmonella test is now being evaluated by several major US food companies. Therapeutic products include fertility hormones and tissue plasminogen activator, an enzyme which dissolves blood clots. The company's shares are traded in the US over-the-counter market.

For the year ended 31st December, 1982 Integrated Genetics reported revenues of US$1.1m. (1981: US$0.1m.), including net interest income of US$0.5m. (1981; US$0.05m.), and a net loss before tax of US$1.8m. (1981; US$0.5m.). The company recently reported unaudited results for the year ended 31st December, 1983 showing revenues of US$3.0m. including net interest income of US$1.2m., and a net loss before tax of US$2.2m.

INTERNATIONAL PLANT LABORATORIES, INC.

13,500 Shares of Common Stock	5.1%	US$567,000	US$567,000

International Plant Laboratories is the US parent company of Twyford Plant Laboratories, near Glastonbury in Somerset, a recognised leader in the tissue culture and micropropagation of a wide range of plants. Twyford, until 1982 a subsidiary of Arthur Guinness & Sons, has been at the forefront of this technology since 1959 and is now capable of reproducing over one hundred different plant species in what is believed to be the largest independent plant tissue laboratory in the world. The company employs 80 people and revenues were US$1.1m. in the year ended 31st May, 1983, 90 per cent. of which were derived from exports. Until now Twyford has concentrated on ornamental plants but is moving more into food crops such as tomatoes and cucumbers.

IQ (BIO) LIMITED

1,925 Ordinary Shares	11.9%	US$1,241,702	US$1,217,139

IQ (Bio) of Cambridge has developed a process for improving the sensitivity of enzyme-based diagnostic tests, thereby making them much more acceptable as substitutes for tests using radioisotopes. The company was established in 1981 at the initiative of the founders of Acorn Computer Group, a leading UK personal computer manufacturer, and has itself developed computer software for use in many types of automated diagnostic tests besides those incorporating its own process.

PLANT GENETICS, INC.

487,500 Convertible Preferred Shares	9.0%	US$1,950,000	US$1,950,000

Plant Genetics is a plant science and agricultural products company in Davis, California that is combining conventional plant breeding with cell and molecular biology and encapsulation delivery systems. The company has developed proprietary technology for the encapsulation of seeds and for the production of "synthetic" seeds which can incorporate nutrients and agricultural chemicals. Plant Genetics is currently selling improved tomato and cotton seed, potato microtubers and transplants.

QUEUE SYSTEMS, INC.

40,000 Convertible Preferred Shares	6.0%	US$500,000	US$500,000

Queue Systems of Parkersburg, West Virginia, is a US manufacturer and distributor of laboratory equipment. The company specialises in sophisticated products for biomedical research including cryopreservation freezing systems, fermentation equipment, cell culture incubators and orbital shakers.

REPLIGEN CORPORATION

350,000 Series 'A' Convertible Preferred Stock	7.5%	US$2,012,500	US$3,325,000
105,300 Series 'B' Convertible Preferred Stock	2.2%	US$1,000,350	US$1,000,350

Repligen was founded in May, 1981 in Cambridge, Massachusetts by two Professors at the Massachusetts Institute of Technology, Alex Rich and Paul Schimmel. Its research activities include a joint programme with Gillette, an investor in the company, to develop personal care products which incorporate applications of biotechnology, a joint programme with FMC to develop biological pesticides; and the development of a proprietary production process for a protein with cancer therapy potential.

VESTAR RESEARCH, INC.

229,166 Series 'B' Preferred Stock	12.2%	US$1,374,996	US$1,374,996

Vestar of Pasadena, California is a company formed in 1981 to develop commercial applications of a microencapsulation technology involving liposomes. Liposomes are microscopic spherical droplets of a water-based solution encased in a lipid coating. The lipids used are naturally-occurring fatty materials so that these liposomes are biocompatible and can be used to deliver drugs or radioisotopes within the body for therapeutic or diagnostic purposes. There is substantial potential for the use of liposomes, for example for the delivery of toxic anti-cancer drugs and in the treatment of animal diseases.

WMC (RESOURCE RECOVERY) LIMITED

702,500 Ordinary Shares	25.0%	US$598,400	US$574,800

WMC of Bristol has developed a process for the treatment of domestic refuse and sewage sludge to produce a uniform fibrous product which can be used as a substitute for horticultural peat or as a raw material for the manufacture of chipboard. Methane produced during the process provides all the necessary power and there is no perceptible effluent or odour. The system offers a number of economic and environmental advantages over conventional methods of refuse disposal and is being marketed to municipal authorities worldwide.

Total		US$23,197,705	US$29,969,639

*Note: With the exception of the investment in CW Ventures, the equity interest represents the proportion of the share capital of each investment owned by the Company assuming that all conversion rights into Common or Ordinary Shares and subscription rights are exercised.

APPENDIX C

Summary of Net Asset Value per Share as at 20th March, 1984

	US$	
Investments		
Quoted, at market value	19,619,659	
Unquoted and restricted, at Directors' valuation	29,969,639	
	49,589,298	
Liquid Resources		
Cash, bonds and certificates of deposit (net of liabilities)	11,308,528	
	60,897,826	
Net Asset Value per Share	US$13.24	(£9.21)

Note: The Net Asset Value per Share has been prepared using accounting policies consistent with those adopted for the period ended 30th November, 1983 except that a discount of 25 per cent. has been applied and only to that part of the holding of restricted investments as comprises restricted shares (see the note to the paragraph headed "Existing Portfolio").

PROCEDURE FOR APPLICATION

Applications must be for a minimum of 50 Shares and thereafter in the following multiples of Shares:—

Applications for not more than 100 Shares	in multiples of 10 Shares
Applications for over 100 Shares and not more than 1,000 Shares	in multiples of 100 Shares
Applications for over 1,000 Shares and not more than 5,000 Shares	in multiples of 500 Shares
Applications for over 5,000 Shares and not more than 20,000 Shares	in multiples of 1,000 Shares
Applications for over 20,000 Shares and not more than 50,000 Shares	in multiples of 5,000 Shares
Applications for over 50,000 Shares	in multiples of 10,000 Shares

Each application must be made on the Application Form provided and be forwarded to National Westminster Bank PLC, New Issues Department, PO Box No. 79, 2 Princes Street, London EC2P 2BD so as to arrive not later than 10 a.m. on 12th April, 1984 accompanied by a cheque or banker's draft.

Cheques or banker's drafts must be drawn in sterling on a branch of a bank which is either a member of the London or Scottish clearing houses or has arranged for its cheques to be cleared through the facilities provided for the members of those clearing houses, for the full amount payable on application. Cheques must be payable to "National Westminster Bank PLC" and crossed "Not Negotiable". A separate cheque or draft must accompany each Application Form. Photocopies of the Application Form will not be accepted.

Acceptance of applications will be conditional on the Council of The Stock Exchange admitting the Shares to be issued to the Official List not later than 18th April, 1984. Moneys paid in respect of applications will be returned without interest if such admission is not granted by that date and in the meantime will be retained by National Westminster Bank PLC in a separate account.

All cheques are liable to be presented for payment on receipt and the right is reserved to retain Letters of Allotment and any surplus application moneys pending clearance of applicants' cheques. Due completion and delivery of an Application Form accompanied by a cheque will constitute a warranty that the cheque will be honoured on first presentation; attention is drawn to the declaration in the Application Form to that effect. The right is reserved to reject any application or to accept any application in part only and in particular to reject multiple or suspected multiple applications. The right is also reserved to treat as valid any applications which do not fully comply with the conditions set out in the Application Form. If any application is not accepted, the amount paid on application will be returned in full and, if any application is accepted for fewer Shares than the number applied for, the balance of the amount paid on application will be returned without interest in each case by cheque through the post at the applicant's risk.

Preferential consideration will be given to applications from shareholders of the Company on the Register at close of business in Guernsey on 28th March, 1984 for up to a total of 400,000 Shares (representing 20 per cent. of the Shares being offered for subscription), if made on the special pink Preferential Application Forms made available to them. Such applications must be for a minimum of 20 Shares or a multiple of 10 Shares and, for applications for over 100 Shares, in multiples as set out above. If applications made on such pink Preferential Application Forms exceed 400,000 Shares, such excess applications, as determined at the discretion of Rothschilds, will be aggregated with other applications.

Fully paid renounceable Letters of Allotment in respect of Shares allotted will be sent by post to successful applicants at their risk by not later than 18th April, 1984 and the last date for registration of renunciations will be 15th June, 1984. Share certificates will be despatched by post at the risk of the person(s) entitled thereto on 13th July, 1984. Pending the issue of definitive certificates, instruments of transfer of Shares will be certified against the register. It is expected that dealing in the Shares will commence on 19th April, 1984.

A commission of ¼ per cent. of the amounts accepted on successful applications will be paid to stockbrokers, banks and other intermediaries in respect of Application Forms bearing their stamp.

AVAILABILITY OF COPIES

Copies of this document with Application Forms attached may be obtained from:—

N. M. Rothschild & Sons Limited,
New Court,
St. Swithin's Lane,
London EC4P 4DU.

3 York Street,
Manchester 2.

Cazenove & Co.,
12 Tokenhouse Yard,
London EC2R 7AN.

N. M. Rothschild & Sons (C.I.) Limited,
PO Box 58,
St. Julian's Court, St. Peter Port,
Guernsey, Channel Islands.

National Westminster Bank PLC,

New Issues Dept.,
PO Box No. 79,
2 Princes Street,
London EC2P 2BD.

Birmingham City Office,
PO Box No. 87,
Colmore Centre,
103 Colmore Row,
Birmingham B3 3NS.

80 George Street,
Edinburgh,
EH2 3DZ.

Bristol City Office,
PO Box No. 238,
32 Corn Street,
Bristol BS99 7UG.

14 Blythswood Square,
Glasgow,
G2 4AQ.

Leeds City Office,
PO Box No. 154,
8 Park Row,
Leeds, LS1 1QS.

SUBSCRIPTION LISTS WILL OPEN AT 10 a.m. ON 12th APRIL, 1984 AND MAY BE CLOSED AT ANY TIME THEREAFTER.

This form when completed should be forwarded to National Westminster Bank PLC, New Issues Dept., PO Box No. 79, 2 Princes Street, London EC2P 2BD, to arrive not later than 10 a.m. on 12th April, 1984 together with a cheque or draft, drawn in sterling on a branch of a bank which is either a member of the London or Scottish clearing houses or has arranged for its cheques to be cleared through the facilities provided for the members of those clearing houses, for the full amount payable on application. Cheques must be made payable to National Westminster Bank PLC, and crossed "Not negotiable". A separate cheque or draft must accompany each application.

Biotechnology Investments Limited

Offer for Subscription

of 2,000,000 Ordinary Shares of 2 cents. each ("Shares") at £9.15 per Share payable in full on application.

Application Form

Number of Shares applied for	Amount due on Application
	£

FOR OFFICE USE ONLY

1. Allotment No.
2. Number of Shares applied for
3. Number of Shares allotted
4. Amount received on application £
5. Amount payable on Shares allotted £
6. Amount returned £
7. Cheque No.
8.

To: Biotechnology Investments Limited (the "Company") and N. M. Rothschild & Sons Limited

Having paid the above-mentioned sum, being the full amount payable on application for the above-stated number of Shares, I/we offer to subscribe for that number of Shares of the Company and I/we agree to accept the same or any smaller number of Shares in respect of which this application may be accepted upon the terms of the Prospectus dated 7th April, 1984 and subject to the Memorandum and Articles of Association of the Company.

I/We agree that this application and any acceptance will be governed by and construed in accordance with English law.

I/We authorise you to send a renounceable letter of allotment in respect of such Shares or such lesser number as may be allotted and/or a cheque representing the balance of any application moneys due to me/us by post at my/our risk to the (first) address written below and I/we hereby authorise you to place my/our name(s) on the Register of Members of the Company as the holder(s) of such of the Shares as are not effectively renounced.

I/We represent and warrant that due completion of this Application Form accompanied by a cheque constitutes a representation and warranty by me/us that such cheque will be paid on first presentation and I/we acknowledge that any allotment to me/us is strictly on this understanding.

In consideration of your agreeing to accept this application upon the terms and subject to the conditions of the said Prospectus I/we agree that this application shall be irrevocable until 19th April, 1984 and that this paragraph shall constitute a collateral contract between me/us and yourselves, which shall become binding upon despatch by post or delivery of the Form of Application to National Westminster Bank PLC, New Issues Department. I/We agree that, in respect of those Shares for which my/our application is not rejected in accordance with the terms of the said Prospectus, notification to The Stock Exchange of the basis of allocation shall constitute acceptance of my/our application on such basis.

I/We warrant and represent that I/we have observed and complied with all requirements and obtained all consents required for this application to be made by any jurisdiction to which I/we may be subject and I/we hereby declare that the Shares are not being acquired directly or indirectly by a United States person (as that term is used in the said Prospectus).

Signature (1)________ Date________1984

Surname and Designation (Mr., Mrs., Miss or Title)

Forename(s) in full.

Address in full.
(A corporation should complete this Form under the hand of a duly authorised official who should state his capacity.)

Please pin cheque here

Joint Applicants must sign below.

(2) Signature________

Surname and Designation (Mr., Mrs., Miss or Title)________Forename(s) in full________

Address (in full)________

(3) Signature________

Surname and Designation (Mr., Mrs., Miss or Title)________Forename(s) in full________

Address (in full)________

(4) Signature________

Surname and Designation (Mr., Mrs., Miss or Title)________Forename(s) in full________

Address (in full)________

YOU ARE ADVISED TO ALLOW TWO DAYS FOR DELIVERY THROUGH THE POST AND TO USE FIRST CLASS MAIL. THE COMPANY RESERVES THE RIGHT TO PRESENT ALL CHEQUES FOR PAYMENT ON RECEIPT AND TO WITHHOLD ALLOTMENT LETTERS AND EXCESS APPLICATION MONEYS PENDING CLEARANCE OF APPLICANTS' CHEQUES.

No receipt will be issued for the amount paid on application but an acknowledgement will be forwarded in due course by renounceable letter of allotment in respect of all or some of the Shares applied for and/or return by cheque through the post of the application money or any surplus thereof.

Broker's stamp

UK COMPANY NEWS

Fleming forms Japanese fund and raising £42m

Robert Fleming, the merchant bank, has formed the Fledgeling Japan Investment Company, a Bermuda based investment trust, and is offering 12m units of five shares and one warrant to raise $60m (£42m).

Jardine Fleming will manage the fund which will be invested in Japan's small companies sector. It expects to take advantage of the recent relaxation of regulations by Japan's stock exchanges allowing greater investment in the second tier market of nearly 450 small to medium-sized companies.

Major changes in the regulation of Japan's over-the-counter market are expected to result in a larger and a more active market. Japan's venture capital industry is also developing and providing a growing number of opportunities to invest in unquoted companies.

Robert Fleming says that all these developments should contribute to a more diversified and active small company sector for investors in Japan. It intends to invest up to 20 per cent of the funds in unquoted companies. A small company is defined generally as not exceeding 50,000m yen (£150m) in annual sales.

Fleming's strategy will be to invest for long term capital appreciation, in companies with high technology profile including communications equipment, computer systems, specialist electronic components and precision engineering. Other sectors considered to have potential include the leisure industry and specialised distribution services.

The company will take a maximum stake of 20 per cent in any one company and will not invest more than 10 per cent in any one investment.

Robert Fleming has placed three quarters of the offer. The remaining 15m shares and 3m warrants are offered in units of 5 shares and one warrant at U.S.$5 (£3.50) payable as to 40 per cent on application, with 30 per cent due by October 5, 1984 and the balance of 30 per cent by April 5, 1985.

The warrants equivalent to one share may be exercised from June 1, 1984 to June 30, 1990 at U.S.$1 (£0.70).

Subscription lists open on April 12, acceptances will be posted on April 14, and dealings are expected to commence on April 16. Brokers to the issue are James Capel.

● **comment**

Jardine Fleming has established a solid reputation for fund management in the Far East including Japan. Given the competition in this investment area, it has been quick to respond to recent changes which should encourage Japan's small companies sector and market a new fund, Fledgeling Japan Investment, focused on this area. Mr John Drysdale at Robert Fleming says *there is no shortage of investment* opportunities and Flemings expects to invest the funds without undue delay. The immediate outlook is according to Flemings "unambiguously good" for the Japanese economy and the corporate sector. It has sweetened the offer with a warrant which virtually wipes out the expected discount to net worth at which the shares will probably open against an average discount for the sector of around 3 per cent.

NatWest assets increase to £60bn

TOTAL ASSETS of National Westminster Bank increased from £54.49bn to £60.02bn at the end of 1983. Advances rose by £3.7bn to £45.17bn, while deposits reached £55.25bn, against £50.2bn.

Mr Philip Wilkinson, the group chief executive, writes in the annual report that the main thrust of the group's operations during 1983 was to extend significantly the scope and depth of services provided to personal and business customers.

Despite difficult trading conditions, excellent progress has been achieved, he states. NatWest has entered new markets, developed new products, introduced new technology and opened for business in new territories. "From this platform we are well placed for further development in the coming year," Mr Wilkinson comments.

As reported March 7, the group raised pre-tax profits in 1983 by 15 per cent from £439m to £503m, in spite of difficult external factors. Provisions for bad and doubtful debts were also up 15 per cent at £264m, against £229m.

Meeting, 15 Bishopsgate, EC, on May 1 at noon.

See Lex

Exeter Building downturn

TAXABLE PROFITS of Exeter Building & Construction Group declined from £983,000 to £659,000 in 1983, following the half-time reduction to £327,000, against £381,000. Turnover for the year of this USM company rose by £1.07m to £34.87m.

After net interest paid of £200,000 (£60,000 received) and tax, net profits were down from £561,000 to £370,000. The final dividend is maintained at 4.5p net for a same-again total of 7p per 50p share, which absorbs £213,000 (£210,000). A one-for-four scrip issue is also proposed.

Shareholders' funds increased from £4.04m to £4.51m

COMPANY NEWS IN BRIEF

ALTHOUGH LAST year was somewhat dominated by Bath and Portland Group's withdrawal from civil engineering, it also produced clear evidence of the underlying strength in most of its other main businesses. And these are the ones on which the group's future prosperity will now be founded, Mr David Macdonald, the chairman, told members at the AGM.

* * *

Thurgar Bardex, plastic products manufacturer, incurred a higher pre-tax loss for 1983 of £25,000 against £4,000, despite a £35,000 profit in the second half.

Profit before interest of £205,000 (£204,000) was down at £180,000 (£200,000). There was no tax.

As last year, there is no dividend. Losses per share are shown rising to 0.19p from 0.03p.

* * *

Sumner Products made a £172,000 pre-tax profit in 1983, against a loss of £29,000.

Garden furniture and metal smallware maker, Sumner, a subsidiary of Hartons Group since 1981 when Francis Sumner Holdings' non-textile side was demerged, had turnover of £3.23m (£3.1m). Tax took £64,000 (£2,000).

A dividend of 0.63p has been recommended. Earnings per share are shown as 6.57p, against a 2.22p loss.

FT Share Information

The following securities have been added to the FT Share Information Service:

Brixt Investments (Section: Trusts Finance Land)
Dewey Warren (Insurance)
Morceau Hldgs (Chemicals)
Rand London Corp (Mines—Finance)

Pauls & Whites

Pauls & Whites, maltsters and animal food manufacturer, has called an extraordinary meeting for April 26 to consider changing the company name to Pauls.

Biotechnology London listing

Biotechnology Investments the $61m (£43m) trust, thought to be unique in backing only biotechnology ventures, is seeking a London listing for its shares and raising a further £18.3m through an offer for subscription of 2m shares at £9.15 a share.

The trust was set up in 1981 by N. M. Rothschild and has Lord Rothschild as chairman. It is seeking the listing to widen the market for its share presently traded on the Luxembourg Stock Exchange and with some limited matched bargains in London. The additional funds will be used for new investments and to augment existing ones.

The trust has received a steady stream of applications from companies seeking investors which are carefully screened by its investment advisers, N. M. Rothschild Asset Management, and a team of eminent scientists who act as consultants.

The majority of its existing 37 quoted and unquoted investments have been in the U.S. because of the higher level and quality of applications. UK investments include a stake in Celltech and two recent investments in small unquoted companies bringing the proportion of the total portfolio in the UK to just under 16 per cent.

The two recent stakes are £850,000 in IQ (Bio) which is investigating a new method of diagnosing diseases from its Cambridge base; and £400,000 in International Plant Laboratories at Twyford which specialises in plant tissue culture.

Net assets of Biotechnology Investments at March 20, 1984 increased to U.S.$60.9m, of which just under half is in 19 unquoted or restricted investments and 32.2 per cent is in 18 quoted investments.

The offer price of £9.15 per share is the sterling equivalent of the net asset value per share at March 20, 1984 of $13.24, after provisions for the payment of an interim dividend of 10 cents per share. Preference will be given for up to 20 per cent of the shares now being offered for subscription, to applications made by existing shareholders at March 28, 1984.

Subscription lists open on April 12. Dealings are expected to begin on April 19.

● **comment**

Changes in the rules on investments in unquoted companies has opened the doors of the London Stock Exchange to Biotechnology Investments. It provides investors, looking for a long term investment, the chance to participate in a trust which has some of Britain's top scientists advising it and is headed by Lord Rothschild, Cambridge biologist turned banker. The trust has established strict criteria including looking only at ventures with high calibre scientists and first rate businessmen. The result has been a sound record of investments and an early increase in net assets. Only founded in 1981, the trust includes investments with some exciting long term prospects. It should prove popular with those who want to back the new developing technologies but do not have the expertise to make their own investment judgements.

Stalemate at Broken Hill

BY KENNETH MARSTON, MINING EDITOR

STALEMATE continues in the wage dispute which has resulted in the closure of the three major mines at Broken Hill in New South Wales which produce nearly half Australia's lead and over 40 per cent of its zinc.

Mr Justin O'Connell, manager of the Broken Hill Mining Managers' Association, said that a mass meeting of miners had rejected a union call to return to work while the dispute goes to the state Industrial Commission.

No negotiations are taking place at the moment between the companies, notably Broken Hill South and CRA, and the unions although it is hoped that they will resume this week.

The unions are seeking, under a new three-year wage agreement, a A$50 (£32.50) wage rise and shorter working hours while the companies have countered with proposals to change work practices in order to improve productivity.

SHARE STAKES

Crosby Woodfield—Baynard Securities has purchased 500,000 ordinary (5.94 per cent).

Keep Trust—Director G. P. C. Howard has exercised an option to acquire 2m shares and now holds 3.15m.

DPCE—Thompson Clive and Partners has reduced its holding by 100,000 shares to 150,000.

Gold and Base Metal Mines—Jaztar has increased its stake to 1,162,495 shares (18.87 per cent).

London Investment Trust—Chairman Mr J. S. Arthur has acquired 100,000 ordinary which together with his family's interests, makes a total holding of 4,890,926 shares (5.5 per cent).

Blue Bird Confectionery—E. Nassar has purchased 60,00 ordinary.

Superdrug—President R. Goldstein has disposed of 20,000 ordinary to six members of his immediate family by way of gift.

Johnson and Firth Brown—BBP Securities, subsidiary of Bajau, has purchased 260,000 11.05 cumulative convertible preference, increasing its holding to 435,000 preference shares.

Squirrell Horn—Ian Yates has sold 87,908 ordinary and now holds 672,000 (11.21 per cent).

Reliant Motor—Mintnix has purchased a further 46,000 shares and now holds 620,000 (11.19 per cent).

Harvey and Thompson—Matherwood has increased its holding to 247,000 (7.58 per cent) shares.

Oxford Instruments—Investors in Industry has reduced its stake to 5,755,000 ordinary (12.98 per cent).

Phoenix Properties and Finance—J. R. Sail has disposed of 424,000 ordinary and now holds 700,592 (9.1 per cent).

Wiggins Group—Mr and Mrs Gudgeon have each sold 132,000 ordinary at 50p per share.

Squirrel Horn—Ian Yates sold 25,000 ordinary and now holds 709,903 (13.92 per cent).

Corten Beach (Holdings)—Mr Alex Birchall has acquired, for an undisclosed sum, 200,000 shares (8 per cent).

BIDS AND DEALS IN BRIEF

Slough Estates has received 99.28 per cent acceptances in respect of its bid for Allnatt London, including the shares owned by Slough subsidiary Allnatt London Properties. The offers have been declared unconditional as to acceptance and will remain open until further notice.

* * *

Hamilton Oil Corporation announces that at close of business on Monday it had received acceptances of its offer for Hamilton Oil Great Britain in respect of 65.09m shares (about 92 per cent). Accordingly, Hamilton Oil Corp intends to acquire the rest of the share capital compulsorily. The offer remains open for acceptances.

* * *

Brixton Estate is to acquire from the Talbot Motor Company 23 acres of land adjacent to its 100 acre Woodside Estate at Dunstable for £1.75m. Outline planning consent has already been granted for an industrial and warehouse estate. The new estate which is to be extensively landscaped will be called Woodside Park.

* * *

Arbuthnot Produce, a subsidiary of Dow Scandia Holdings, has sold its interest in Marcuse Dorme and Co. to Arthur Barfield Group. Mr Marcuse was a founder member of Marcuse Dorme and Co., but left the company to join Landauer when Arbuthnot Produce decided to sell its interest in Marcuse Dorme.

The new division of Landauer will trade as Marcuse Glass & Chemicals.

BOARD MEETINGS

The following companies have notified dates of Board meetings to the Stock Exchange. Such meetings are usually held for the purpose of considering dividends. Official indications are not available as to whether the dividends are interims or finals and the sub-divisions shown below are based mainly on last year's timetable.

TODAY

Interims:—Glaxo, James Halstead, Highland Distilleries, Inter-City Investment.

Finals:—Cardinal Investment Trust, Dentsply, Edinburgh Securities, General Investors and Trustees, Hunting Petroleum Services, William Jacks, Jenks and Cattell, Jersey Electricity, Rugby Portland Cement.

FUTURE DATES

Interims—
Fisher (Albert) ... Apr 11
Pineapples Dance Studios ... Apr 11
Ulster Television ... Apr 11
United Wire ... May 3

Finals—
Allebone ... Apr 18
Ash and Lacy ... Apr 16
Barrow Hepburn ... Apr 16
Clarke (Clement) ... Apr 12
Fogarty ... Apr 24
Gen. Investors and Trustees ... Apr 9
Grosvenor Group ... Apr 9
Greenbank Industrial ... Apr 11
Haden ... Apr 11
Hambro Life Assurance ... Apr 17
Ibstock Johnsen ... Apr 18
MCD ... Apr 17
Markheath Securities ... Apr 18
Sindall (William) ... Apr 11
Sun Life Assurance Society ... Apr 10
Woco ... Apr 18

† Amended.

FINANCIAL TIMES STOCK INDICES

	Apr. 6	Apr. 5	Apr. 4	Apr. 3	Apr. 2	Mar. 30	1983/84 High	1983/84 Low	Since Compilation High	Since Compilation Low
Government Secs.	82.79	82.81	82.60	82.66	83.02	83.19	83.77	77.00	127.4	49.18
Fixed Interest	86.58	86.62	86.52	86.56	86.75	86.75	87.48	79.05	150.4	50.53
Industrial Ord	865.4	867.0	867.8	869.8	870.8	877.0	901.4	598.4	901.4	49.4
Gold Mines	655.5	665.4	645.9	638.7	651.3	656.9	734.7	444.6	734.7	43.5
FT-Act. All-Share	516.21	519.08	516.20	517.06	522.95	524.20	531.00	382.22	531.00	61.92
FT-SE 100	1096.3	1102.2	1096.6	1096.4	1108.1	1112.3	1130.7	997.5	1130.7	997.5

RECENT ISSUES

EQUITIES

Issue price p	Amount paid up	Latest Renunc. date	1983/84 High	1983/84 Low	Stock	Closing price p	+ or −	Net Div.	Times Covered	Gross Yield	P/E Ratio
[illegible]											

FIXED INTEREST STOCKS

Issue price £	Amount paid up	Latest Renunc. date	1983/84 High	1983/84 Low	Stock	Closing price £	+ or −
[illegible]							

"RIGHTS" OFFERS

Issue price p	Amount paid up	Latest Renunc. date	1983/84 High	1983/84 Low	Stock	Closing price p	+ or −
[illegible]							

Renunciation date usually last day for dealing free of stamp duty. b Figures based on prospectus estimates. d Dividend rate paid or payable on part of capital; cover based on dividend on full capital. g Assumed dividend and yield. u Forecast dividend cover based on previous year's earnings. C Canadian. F Dividend and yield based on prospectus or other official estimates for 1984. H Dividend and yield based on prospectus or other official estimates for 1983-84. Q Gross. p Pence unless otherwise indicated. ¶ Issued by tender. ‖ Offered to holders of ordinary shares as a "rights." ** Issued by way of capitalisation. §§ Reintroduced. ¶¶ Issued in connection with reorganisation merger or take-over. ‖‖ Allotment letters (or fully-paid). ‡‡ Introduction. ☆ Unlisted Securities Market. § Placing price. †† Official London Listing. • Offered as units, comprising one ord and one N/V A ord. ‡ No par value.

PENDING DIVIDENDS

Dates when some of the more important company dividend statements may be expected in the next few weeks are given in the following table. The dates shown are those of last year's announcements except where the forthcoming board meetings (indicated thus*) have been officially notified. Dividends to be declared will not necessarily be at the amounts in the column headed "Announcement last year."

	Date	Announcement last year		Date	Announcement last year
[illegible]					

‡ Forecast. § Scrip issue since made.

Granville & Co. Limited

Member of NASDIM
27/28 Lovat Lane London EC3R 8EB Telephone 01-621 1212

Over-the-Counter Market

Capitalisation £000's	Company	Price	Change on week	Gross Div. (p)	Yield %	P/E Actual	P/E Taxed
5,764	Ass. Brit. Ind. Ord.	130	[illegible]				
[illegible]	Ass. Brit. Ind. CULS	142	[illegible]				
3,704	Airsprung Group	78	[illegible]				
[illegible]	Armitage & Rhodes	44	[illegible]				
40,289	Bardon Hill	323	[illegible]				
[illegible]	Bray Technologies	56	[illegible]				
[illegible]	CCL Ordinary	227	[illegible]				
[illegible]	CCL 11pc Conv. Pref.	152	[illegible]				
[illegible]	Carborundum Abrasives	[illegible]	[illegible]				
[illegible]	Cindico Group	103	[illegible]				
[illegible]	Deborah Services	70	[illegible]				
[illegible]	Frank Horsell	211	[illegible]				
[illegible]	Frank Horsell Pr Ord 87	159	[illegible]				
[illegible]	Frederick Parker	227	[illegible]				
[illegible]	George Blair	68	[illegible]				
[illegible]	Ind. Precision Castings	60	[illegible]				
[illegible]	Isis Conv. Pref.	128	[illegible]				
[illegible]	Jackson Group	250	[illegible]				
[illegible]	James Burrough	113	[illegible]				
[illegible]	Robert Jenkins	75	[illegible]				
[illegible]	Scruttons "A"	120	[illegible]				
[illegible]	Torday & Carlisle	135	[illegible]				
[illegible]	Travian Holdings	400	[illegible]				
[illegible]	Unilock Holdings	15	[illegible]				
[illegible]	Walter Alexander	85	[illegible]				
[illegible]	W. S. Yeates	243	[illegible]				

FINANCIAL TIMES SURVEY
Monday April 9 1984

Cleveland, Ohio

Cleveland is in a period of awkward transition. As older labour-intensive industries decline it is searching for its share of new technologies and services jobs

By TERRY DODSWORTH

ONLY 180 YEARS ago, Cleveland was little more than a couple of shacks on a marshy flood plain where the Cuyahoga river empties into Lake Erie. But nature had already singled it out for an eventful future.

Standing at a vital route intersection it exploded into growth as the American industrial revolution swept through the North East, successively absorbing and profiting from the waves of investment in steel, oil, motor cars and general metal working.

That great wave of manufacturing expansion has now flowed on. Today, Cleveland wears the unmistakably fading look of a nineteenth-century boom town, its sprawling steel mills smoking fitfully along the banks of the Cuyahoga, while its commercial centre, sprinkled with the architectural evidence of a prosperous past, seeks a new future with a rash of modern office buildings.

Fading look

It is by no means clear as yet what this future will hold. Like most of the great metal-producing centres of the western world, Cleveland is now in the midst of a period of awkward transition.

This change was brought home to it, and to all the world, in a series of incidents the city likes to forget—the bitter race riots of the late 1960s, which virtually coincided with the environmental row which broke out when the heavily polluted river caught fire.

Ten years later, Cleveland defaulted on some of its debts, the final ignominy for a city which had generated such enormous wealth in the past.

The shock of these events has undoubtedly altered attitudes. The glittering new city centre skyscrapers are the most visible evidence that the city is trying to change itself, and its direction, but the transformation by no means starts and ends there.

Politically, Clevelanders have taken a hard look at themselves and voted in a sober Republican mayor who has been willing to increase taxes to balance the books. This new realism has been accompanied by a broad-based move in the business community to re-inject some dynamism into the city's industry.

The problem these new pioneers face is one that is common to much of the American north-eastern industrial belt. From Detroit to Pittsburgh, the old boilerhouses of the U.S. manufacturing system are in decline as demand moves on to newer technologies than the ones they gave to the world. There are a number of sometimes conflicting explanations as to why this evolution in industry has hit the region so hard — but virtually everyone is agreed that it was compounded by a dangerous mood of complacency in the post-war period.

In one sense, this attitude was not particularly surprising. Like other U.S. manufacturing areas, Cleveland was lulled into a false sense of security by the golden era in industry which broke out between the end of the depression and the oil shock of the early 1970s.

Steel production boomed in this period, while the steady expansion of the U.S. motor industry brought prosperity to its component and machine tool companies. But these were also the years which sowed the seeds of the future setbacks. U.S. industry had been so dominant after the war that it was exposed to little international competition at home, and had ready markets overseas. The challenge was to produce, not sell.

The rise of Japanese industry and the reconstruction of Europe altered this comfortable operating environment. The foreign car invasion, which has resulted in import market shares of between 25 and 30 per cent, is just one example of this trend; a similar phenomenon is evident in machine tools and steel, both industries which are either asking for quotas or already have them.

According to a recent study published by the Ameri-Trust band and prepared by the SRI research organisation, however, the impact of internal U.S. competition has been even greater. As the basic industries evolve towards new production methods, they are shifting their green-field investments away from the North East to undeveloped farmland areas where wages are lower and workforces more open to change.

Eaton, the motor components manufacturer, is an outstanding example of this trend: once a major Cleveland employer, it now has virtually no manufacturing jobs in the city.

Some economists and analysts put heavy responsibility for this decline upon trade union organisation. "No one will build a plant in Cleveland like Honda's in Columbus," says Mr Theodore Aldred Dean of the Weatherhead School of Management at Case University, "because no one walks into the United Auto Workers unless he has to."

As this example shows, Cleveland is now losing jobs to areas which are virtually on its doorstep in southern Ohio, and where a lack of industrial tradition is seen as a positive advantage.

Management also comes in for its share of criticism. The last 20 years have seen both a slippage in U.S. investment and a willingness to compromise on productivity which is now being paid for in lost markets. The cheap dollar policies of the 1970s in no way prepared industry for the tougher competitive climate.

The impact of these failures is clearly shown in the employment and demographic statistics for the area. Cleveland's population peaked in the late 1950s, when it approached 1m, but it has since fallen steadily to reach 574,000 by the last census date of 1980.

The city has an unemployment rate of almost 14 per cent, and in the larger greater Cleveland Standard Metropolitan Statistical Area, non agricultural employment has fallen from 874,000 in 1978 to 817,000 last year. In the same period, service jobs have increased only marginally, while manufacturing jobs fell by almost 23 per cent to 210,000.

Some of the factors which have produced this stark picture of decline will be virtually impossible to reverse. The steel industry, for example, has now moved irreversibly towards an international commodity structure and will never again employ the numbers it once found necessary in the U.S.

At the same time, the drive towards factory automation and manufacturing productivity is cutting away at the employment base in many of the industries which were the foundation of the Cleveland economy.

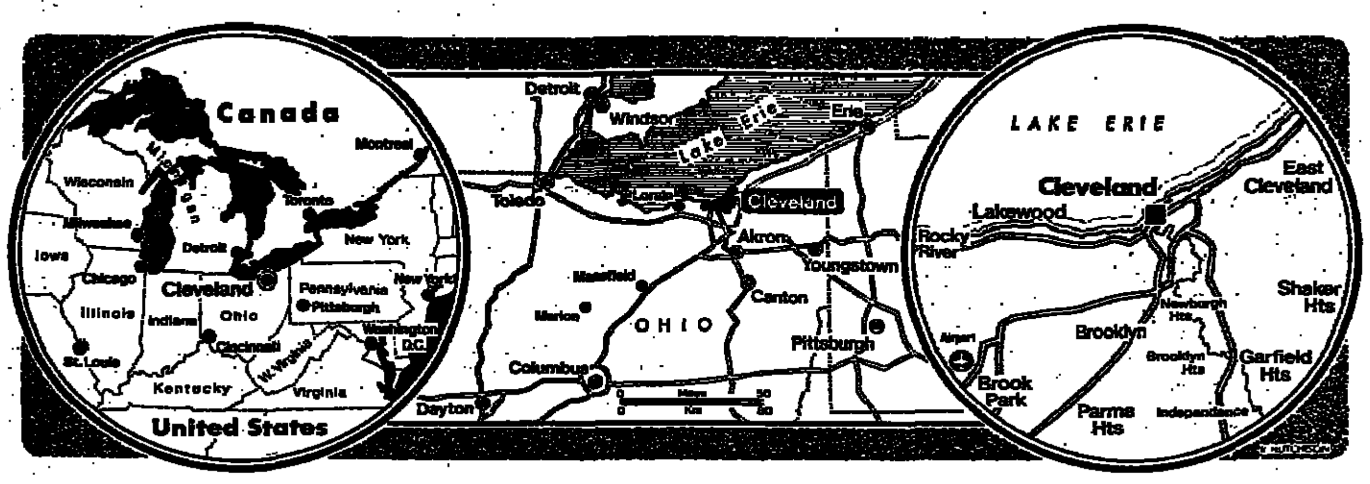
Given that some of these basic industries seem ready for even further shake-outs, it is difficult to see how the city can escape quickly from its downward spiral. Even so, some experts argue that the severity of the contraction may have a beneficial effect in the long run.

"People always underestimate the forces of equilibrium which are at work in institutions," says Mr Alfred, pointing to some local union contracts where wages have been brought down to "something reasonable" to keep companies in Cleveland.

One of the most obvious examples of this process of self adjustment is in the way the city has rallied to the efforts to put its finances back on a sounder footing. This move has had both a political and an institutional dimension. Politically, it brought in a mayor, Mr George Voinovich, with a sufficiently strong mandate to be able to push through two personal tax increases levied on city payrolls, although he has failed with a third effort. Institutionally, it has enrolled business and the professions—and to some extent the trade unions—in a drive to reinvigorate the city.

The main hope for the future, however, must lie in an entrepreneurial re-birth of the kind which has suddenly lifted Boston out of the rut over the past 10 years. Venture capitalists in Cleveland give the impression that there is plenty of money available for new projects if only the entrepreneurs can be found to use it — indeed, the Morganthaler Management Corporation, the largest venture capital organisation in the area, and one of the oldest in the country, does much more of its business outside the region than within it.

There are many hard-nosed businessmen in Cleveland and the North East who believe that this recovery will emerge once the natural process of cost adjustment had worked through.



MILESTONES IN THE CITY'S LIFE

- In 1982, Cleveland was recipient of the All-America Cities award, having recovered financially after defaulting on its fiscal obligations in 1978; Cleveland was the first city to default since the great depression.
- The Cleveland Foundation, begun in 1914, is the country's oldest and largest community foundation, with assets of more than $200m. It contributes over $10m annually to such local programmes as family planning, care for the young and the aged, and various neighbourhood revitalisation projects.
- The Cleveland Clinic, founded in 1921, has become one of the largest privately funded and acclaimed medical centres in the world. Housed in 15 buildings over 11 square blocks, it has over 1,000 beds. This institution, a leader in the fields of artificial organs and treatment of cardiovascular diseases holds claim to numerous medical advancements, such as practical use of one of the earliest heart and lung machines, development of coronary cine angiography and cardiac catheterisation, as well as the artificial kidney. A team at the clinic's Artificial Organ department is now in the process of developing an artificial heart and pump.
- The city is home to the Fourth District Federal Reserve Bank, two national investment banks, McDonald and Company and Prescott, Ball and Turben, and two of the top ten law firms in the country, Jones, Day, Reaves and Pogue and Squire, Sanders and Dempsey. Cleveland has 26 savings and loan associations with combined assets of nearly $13bn. Total bank and savings and loan assets in the Greater Cleveland area amount to over $30bn.
- Greater Cleveland ranks tenth nationally in newspaper markets with 23 dailies with a combined circulation figure of more than 1m.
- The Erie Canal, in use by 1832, along with the opening of the railroad in 1851, made Cleveland into a major port, linking it with the eastern markets. Over 1,200 cargo ships a year dock at Cleveland's 65 docks, annually loading or unloading more than 20m tons of goods.
- One of the cultural centres of the U.S., the Cleveland Symphony, formerly conducted by Lorin Maazel, is considered one of the "Big Five," and the Cleveland Museum of Art ranks with the greatest museums in the world.
- Ranking fifth in the U.S., Cleveland is headquarters to more than 30 corporations listed in the Fortune 1,000. John D. Rockefeller, a native of Cleveland, began his Standard Oil of Ohio, Sohio (the first link in his chain of Standard Oil companies) in 1870. Other famous Clevelanders are Mark Hanna, a U.S. Senator and Henry B. Payne, who also served in the Senate. Jeptha P. Wade, a prominent Cleveland businessman is best known for combining 13 different telegraph companies into what became known as the Western Union Telegraph Company.

RIVKA NACHOMA

CONTENTS

Prudence cushions the shocks

Banking

TERRY DODSWORTH

CLEVELAND'S BANKS have rarely figured big in the record books. Sandwiched between the giants on the east and west coasts, overshadowed in size by their near-neighbours in Chicago, they have established a reputation for a brand of prudence which verges on conservatism.

Their spirit of adventure has failed to match that of the large and successful manufacturing companies on their doorstep which have gone out and conquered the world.

This caution has its critics. But in the troubled credit conditions of the past few years it has also insulated the Cleveland banks from the worst of the problems that have hit others in Third World lending, energy investment and real estate.

Indeed, whereas many U.S. banks were shrinking their assets last year, as they cut back loans to improve their capital ratios, the Cleveland banks were adding to their loan portfolios. One of them, Society Corporation, expanded its book by around 25 per cent, and National City's also went up by 15 per cent.

This is not to say that they have no problem areas. National City had to make loan loss provisions last year of $23.9m, and AmeriTrust, which has been stung in both Mexico and Brazil, also provided $17m after setting aside $41m over the previous two years.

Indeed, AmeriTrust's non-performing assets as a percentage of its total assets has now risen to 2.3 per cent—although it admittedly uses the conservative method of putting loans into the non-accrual category after 60 days of non-payment of interest.

By the standards of many U.S. banks, however, the Cleveland banks have maintained a solid safety margin. Their loan loss reserves tend to be a little higher as a percentage of total loans than the average of 1.3 per cent for the industry last year, and they are, if anything, undergeared: National City's long-term debt stands at only 20 per cent of total capital, while Society Corporation's is 19 per cent, and AmeriTrust's is zero. By contrast, most of the top 20 U.S. banks operate with long-term debt of more than 30 per cent of capital, while Citicorp, the industry leader, has a ratio of 68 per cent.

The flip side of this emphasis on cautious development is that the Cleveland banks have not grown at anything like the same rate as the pace-setters in the U.S. industry. According to the latest analysis by Forbes magazine, asset growth in the banking sector over the past four years has averaged 11.3 per cent, while equity per share has grown by 8.7 per cent. None of the Cleveland banks has matched these figures.

The fastest growing group, National City, achieved 10.6 per cent in asset expansion, but only 6.8 per cent a year in equity per share, while AmeriTrust's assets grew at a rate of only 2.6 per cent.

Profits have suffered to some extent as well. Over the same four year period, none of them has quite matched the industry's average annual growth of 8.4 per cent.

This reflects National City's fall from grace in its portfolio investment business, which had provided a large slice of its profits in the 1970s, but which took a knock when the Federal Reserve Board changed its monetary policy in 1979; and at AmeriTrust, which consistently earns a healthy return on its assets, it underlines a failure to gear up sufficiently on its equity base.

It is tempting to see this pedestrian performance as yet another indication of the economic malaise which has overtaken Cleveland. Until the 1970s, the banks were operating in one of the strongest economic environments in the U.S. As growth drifted to other areas of the country, they have inevitably suffered in not responding with an aggressive drive to expand their asset base elsewhere.

Today, however, a more adventurous policy is being forced upon them. Like banks throughout the country, the Cleveland institutions are now faced with the prospect of a new deregulated structure which will allow them to move their deposit operations outside the State — and which would also allow in outside competitors.

Until 1978, the Ohio banks had operated within theoretically limited marketing areas based on county structure. However, a form of State-wide banking was feasible even at that time, through holding company structures which allowed groups in one county to invest in banks in other areas as long as the two businesses were kept operationally separate under the parent company umbrella. Using this loophole in the law, several banks developed embryo State-wide structures.

Rash of takeovers

Six years ago, the State gave a further nudge to this process of integration by altering the regulations to allow the complete merger between the so-called multi-bank holding companies and their subsidiaries, and allowing them to branch under their own names across county lines. Another rash of takeovers followed, reducing the state's total of banks from 400 to 337 in the ten years to 1983.

This wave of amalgamations has left Banc One as the leading institution in the state in terms of assets, although National City is now heading for the premier position through its agreed bid for Bancohio. If this deal goes through—and there seems no reason why it should not—National City will emerge with assets of around $12bn, pushing up its ranking in the national league from 48 to 28, against Banc One's position of 43rd.

Mr Julien McCall, chairman of National, makes no bones about the fact that this policy of local state expansion is designed to put the bank back into a position to play an aggressive role on the development of interstate banking which is expected to sweep across the U.S. during the next few years.

"Our objective is to be a fully state-wide commercial banking organisation," he says. "First we want to grow and expand our business by broadening our market base. Secondly, we anticipate that in some way there will be interstate banking, and we do not want to be a bank available to be acquired. We aim to be a major part of a regional interstate network."

At AmeriTrust, it is roughly the same story. "Our loan growth over the last few years has been very modest," says Mr Jerry Jarrett, chairman. "We now have some fairly aggressive objectives in commercial and retail banking, but we recognise that we cannot generate the necessary loan growth internally. Consequently, we have made it clear that we shall be active in acquisitions."

Society is not so obviously aggressive, although it has clearly been positioning itself to be ready either to acquire or be acquired at a reasonable price when the barriers to interstate banking go down.

Banking arm

Originally a savings bank, Society changed status in 1958, and has since added a commercial banking wing to its primarily retail, consumer business.

As a result of a series of takeovers starting back in the 1960s, it has one of the largest branch networks in the state, soon to be expanded to around 350 units after the amalgamation with a Dayton bank. But it is markedly reluctant to expand too far into the risky business of commercial banking outside Cleveland, in spite of its established expertise in the field of satellite financing and health care.

This jockeying for position is now continuing in a sort of no-man's-land as the banks await further legislative moves which will allow them to expand or be absorbed by someone else. A relatively straightforward Bill is now on the table at the State legislature, saying simply that the local banks will be allowed to ally with banks in reciprocating states.

The consensus view however, is that this will not go through until the banks themselves come to some sort of understanding on what they want—and at present they are split right down the middle.

On the one side, there is a group led by National City and Bank One, that would like to go in one step to complete reciprocating status, with Ohio banks being allowed to expand into any state in the country, so long as it had similar rules.

On the other, there is a strong *body of opinion in favour of a* more regional structure. The view here is that the banks ought to be allowed to group with institutions in neighbouring states to form strong regional groups, either as an end in itself, or as a first move towards regrouping to face the challenge of nationwide banking.

Whichever side wins, it is clear that the banks have only taken the first step so far down a road towards rationalisation which will see at least some of them disappear.

CLEVELAND-BASED BANK HOLDING COMPANIES

(year ended December 31, 1983)

Holding Company	Total assets $m	Growth rate	Net income $m	Growth rate	Total deposits $m	Growth rate	Return on assets	Previous year	Return on equity	Previous year	Loan-loss provision $m	Non-performing assets $m	As % of total assets
National City Corporation*	6,585.9	−3.5	48.1	+10.2	4,566.6	+1.8	.77	.76	11.84	11.21	23.9	54.9	.8
AmeriTrust Corporation	5,797.1	+0.8	51.1	−17.6	4,223.5	+4.5	.90	1.10	8.29	10.65	17.0	132.9	2.3
Society Corporation†	4,282.8	+9.5	29.3	+9.6	3,357.1	+11.5	.74	.67	11.41	11.36	9.8	37.4	.87
Centran Corporation	2,900.0	+3.6	18.0	NA‡	2,200.0	+10.0	.63	NA	12.15	NA	10.3	47.1	1.6

* Agreement in principle for the merger of BancOhio Corporation, Columbus, with assets of $6.1bn, into National City Corporation.
† Approval received from Federal Reserve Bank of Cleveland to acquire The First National Bank of Salem, transaction effective on January 9, 1984. Application to merge Interstate Financial Corporation, Dayton, with assets of $1.1bn into Society Corporation, filed with Federal Reserve Bank of Cleveland.
‡ Centran Corporation showed a loss of $58.7m for the 12 months of 1982.

Research: Rivka Nachoma

Cuts and corporate sector aid recovery from default

Politics

PETER BRUCE

TRYING TO hold a conversation with Dennis Kucinich in a downtown Cleveland cafeteria can be frustrating. People keep coming up to pat him on the back, shake his hand, talk about old times, as one retired judge did, or of new plans.

Mr Kusinich is popular in some quarters but mere mention of his name invites almost universal condemnation from Cleveland's normally generous establishment which supports *the city's world famous* orchestra, and art museum, and which has helped Cleveland become the ntaon's major per capita contributor to the United Way, the biggest charity in the U.S. In 1979 the establishment broke him.

Kucinich used to be the mayor of Cleveland, but his extraordinary rise to prominence—at 31 he was the city's youngest ever leader when elected by a slim majority in 1977—effectively came to an end on the morning of December 15 a year later, when local banks pulled the carpet out from under his feet and declared Cleveland in default.

He was thrown out of office at the next election, in 1979, despite winning a tax increase to help pay off the city's debts and despite winning by a 2-1 margin a referendum supporting his decision not to raise the money by selling the Cleveland power utility into the private sector—an option he maintained was put to him by the banks.

"I would have been Governor of Ohio today if I had done the deal," he says.

But the default, on debts that had been rolled over before, was not altogether surprising. Kucinich had antagonised Cleveland's powerful business community early on, characterising corporate leaders as either greedy or self-seeking and he had also lambasted the city council as "buffoons."

He had also focused nationwide attention on Cleveland by gathering around him a coterie of young, inexperienced officials (his financial director was then 26, his assistant safety director 22, and his school board president 27).

Personal protest

A few days after the default was declared and true to his populist style, he strode into downtown bank and publicly withdrew his personal account in protest.

A delegation of top businessmen, incensed by the antics of their mayor, had by then approached George Voinovich, Ohio's lieutenant governor, and a Republican, and got him to oppose Kucinich at the next election, which he did, successfully, at the end of 1979.

Voinovich had not a little help from the powerful city council president, George Forbes, a Democrat, who refused to back Kucinich and thereby deliver the city's important black vote.

With the "juvenile delinquents" as Barrons, the U.S. financial weekly, call the Kucinich administration, out of the way, corporate Cleveland

Cleveland Mayor George V. Voinovich, in office since 1979; responsible for replacing confrontation with co-operation between the city's public and private sectors.

was quick to restamp its mark on the city's administration.

Voinovich began calling in private sector help the day he entered office and a team of auditors from seven local accounting firms and five corporations began rummaging through the city's books.

The mess was remarkable. Accumulative city debt turned out to be more than $100m. Parts of City Hall were unoccupied while municipal employees were billeted in expensive downtown offices. The private sector task force brought in by Voinovich eventually came up with a list of 650 economies designed to save an immediate $37m and a further $57m a year.

Meanwhile, the new Republican mayor and the long-serving Democrat at the head of the city council (Forbes has been council president now for 12 years), were getting along famously. Peace had broken out, the books had been balanced.

Last year Cleveland successfully re-entered the bond markets, raising a modest $27.75m issue to help repair a crumbling infrastructure and some of the 11,000 potholes that dot the city's streets.

The sale of the bonds was an important boost to the administration whose efforts to get Cleveland's credit rating with Moody's and Standard and Poor improved had failed a month or two before. Cleveland has been back to the debt market again, this time for more than $50m.

The Cleveland banks had also agreed, on pain of a three year financial recovery plan, to convert the city's debt into long-term bonds and to top it all, Voinovich was re-elected with a whopping majority in November 1981, to a four-year term after voters had agreed to extend the mayoral term of office from two years. The mayor's office is now beginning to get a little steamy however.

"Tranquility is not a natural state of politics here," says Kucinich, who, to the horror of those critics who thought him dead and buried, won a seat back in counell last year.

Voinovich's problem is that he is having to compromise in order to keep Cleveland in the black and the banks satisfied. Policemen have been laid off. A *few fire stations closed.* Envirmonmental control resources have been pruned.

The cuts so far have been relatively minor, but rationalisation of services wasn't supposed to be part of the rebirth of sound city government at all. The mayor failed in February to win a further tax increase from the city's voters (even though the Cleveland voters contribute only around 30 per cent of total income tax revenues; the rest comes from suburban commuters who work downtown and who are taxed on their payrolls).

He then retaliated by cutting back some services, an action that flew right back at him in the form of a blizzard so severe that the city found it did not have the resources left to clear the streets of snow.

There are other banana skins lying in waiting for the mayor. George Forbes, whose role as Voinovich's link to the all-Democrat city council is vital and whose finely tuned sense of compromise between the priorities of his black constituents and his establishment patrons is legendary, is also in some trouble.

Police union upset

Forbes has upset the local police union by vacillating on their demand to be given more powerful handguns. His personal finances have also caused him some embarrassment—he recently failed to pay his water bill until it was around $808 in arrears and his law firm has had federal tax liens filed against worth $30,000.

Voinovich has also backed and won the support of voters on a proposal to put up nearly $8m to encourage an entrepreneur to build a modern "mini mill" to *produce steel bars in Cleveland.* Voinovich says he is certain the project will go ahead, but steel industry analysts doubts its viability, and point out that Republic Steel already has two mothballed steel mills in Cleveland.

The scheme's promoter is now reported to be talking to other authorities in the region about a similar project. Certainly, analysts say, building two would be a nonsense and there is a danger that Voinovich's administration could be embarrassed if the mill is not now built in Cleveland.

City Hall's support for the bar mill has also alienated Cleveland's steelworkers. The United Steelworkers' Union director in Cleveland, Frank Valenta, who supported Voinovich's election in 1979 and 1981, says he was not consulted about the bar mill by the mayor and fought against it as the mini steel mill industry in the U.S. *has traditionally not employed* organised labour.

Valenta, a potentially powerful influence on the big blue collar vote, in Cleveland, says he would not support Voinovich again. "The honeymoon," he says, "is over."

On balance, however, Voinovich is still ahead of the game and with an election coming up next year some local observers believe he may decide to quit while he is ahead. The mayor says he hasn't decided yet but that he has been approached about possible moves towards either Columbus, the state capital, or Washington.

One barrier to getting out unscathed could be the lack of an obvious successor. "He should be *grooming* someone now," says one city lawyer. Another intriguing possibility could be an attempt next year by Dennis Kucinich to unseat Forbes as council president.

In a sense, though, the politicians are irrelevant to Cleveland's short-term future. Responsibility for this seems to rest for now squarely with the business community.

The corporate Cleveland strategy appears to have two main prongs. Firstly the Greater Cleveland Round Table, a discussion group set up by Mr E. Mandel de Windt, chairman of the Eaton Corporation, in 1981, serves to bring together as many of Cleveland's diverse ethnic political industrial and labour interests as possible in an attempt, as its director, Sarah Austin, describes, to "rationalise and prioritise Cleveland's agenda."

The Cleveland Tomorrow Committee, on the other hand, also established by Mr de Windt and other business leaders in 1981, appears to have set the city's targets in advance, coming out as it did in 1981 with a programme to revive Cleveland's economic fortunes.

Cynics are probably being unfair in arguing that the Round Table exists to do little more than bring community leaders in behind the Cleveland Tomorrow programme, but there are signs of frustration at the time being taken to tackle what corporate leaders believed to be the local economy's biggest problem—*high wages—and this* was one of the issues the Round Table was supposed to deal with.

Only a handful of union leaders sit on the Round Table and Sarah Austin concedes that the body is still "trying" to *filter its message down to union* rank and file. Mayor Voinovich also says that the management-labour consensus "is not happening quickly enough."

Even Dennis Kucinich admits that business "has a legitimate function and interest in the future of the city's economy" and it seems that the structures erected by corporate Cleveland to map out that future, have gained the broad support of the population.

Given the restoration of sound, or at *least consistent,* management to city government, a national economic recovery in train and at least a veneer of civic consensus, Cleveland has probably not had a better opportunity in years to resolve its problems.

Those problems after decades of mismanagement and waste, have come to resemble, in scale, if not detail, those of any other mature U.S. metropolis. And that is an achievement in itself.

Strong growth offers an unexpected lifeline

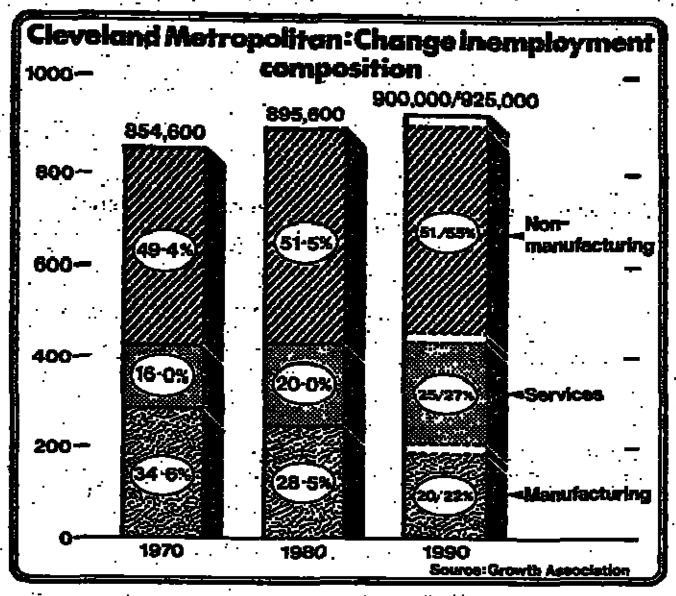
Services

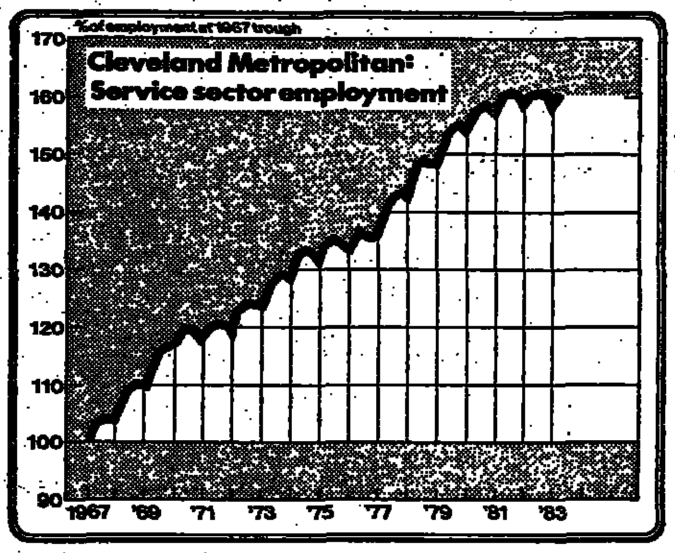
PETER BRUCE

ASK ANY Clevelander what the city's fastest-growing privately-held company produces and most would probably suggest a sophisticated piece of machinery. In fact, for the past two years, the prize has gone to a father and son who run a string of parking lots.

In a city where manufacturing giants like Republic Steel, Eaton Corporation, TRW, White Consolidated, Parker Hanifin, Acme Cleveland and Sohio have grown up, the 3,252 per cent growth in Kassouf Parking's turnover last year, to $5.9m, might reasonably be considered a near heresy. But that is not the end of it. Cleveland's biggest employer used to be Republic Steel—now it is a hospital. The city's fastest growing industry is no longer the motor components business, but the law.

There has been a sharp change in the city's industrial profile in the past five years. As virtually every sector of the diversified manufacturing economy has fallen foul of the recession, so has an apparently immune services sector shrugged it off. While manufacturing employment fell from 276,300 in 1979 to around 212,000 towards the end of last year, service jobs, excluding finance, insurance, local government and property, rose from 184,200 to nearly 200,000. In the past 10 years, service industry jobs have increased by well over 30 per cent.





Rewards

The strength of Cleveland's service sector, and of the non-manufacturing sector in general, has given heart to big business in the city. "Anytime you move from manufacturing industry to services you protect yourself from cycles," says one AmeriTrust economist.

This growth is partly explained at least by the fact that while many of the major Cleveland-based manufacturers have cut back severely, if not totally, on production in and around the city, their headquarters have remained and local legal and accounting firms, consultancies and other skilled professionals have been able to reap the rewards of industrial expansion in the south, where labour is cheaper, and abroad.

A second, and possibly less fragile comfort is that the city's position on Lake Erie and its commanding view of the freight routes between the Eastern seaboard and the heavy industry around Chicago and Detroit — the very things that attracted manufacturers to Cleveland in the first place — are likely to remain an important impetus to investment in distributive trades.

But perhaps because the slump in manufacturing employment has been so sudden, and so steep, neither the business, nor the academic community knows, with any degree of certainty, just why the service industries have taken such a hold.

Whatever the reasons behind the growth, the fact of it has come as an enormous relief to the city's busy strategists. "I've always felt we have the strongest management services sector between New York and Chicago," says Mr James Trutko, an economist with the Greater Cleveland Growth Association (the local Chamber of Commerce).

The services lifeline often hangs, however, by a very thin thread. One recent demonstration of this came late last month when the U.S. Justice Department officially gave Republic Steel and Jones & Laughlin Steel the go-ahead to merge. Effectively, Republic is being taken over by J & L's parent, LTV of Dallas and while the new steel group's operational headquarters will stay in Republic's building in downtown Cleveland, executives there expect some key operations, including the legal and financial departments, will have to report to Dallas. Cleveland's service sector will have to fight to hold on to the business.

It is difficult to judge just how important corporate headquarters are to the local economy. Dr Richard Knight, a Cleveland State University economist, argued in 1977, however, that the contribution made to the economy by headquarter jobs tended to be overshadowed by publicity given to plant closures and that one headquarters post in fact, supported five times as many local jobs as a single production worker. It was then, and still is, Dr Knight's contention that Cleveland is in the process of establishing itself as a centre of corporate brain power and advanced services.

Equally difficult to measure is the degree to which those corporations with headquarters in Cleveland are committed to staying. About one-third of the city's major headquarters have been lost since the early Seventies — around five have moved and around six have been lost through mergers or takeovers.

The departure of Harris, a manufacturer of printing equipment, to Florida about two years ago was a clear signal of just how difficult the dreams of a new, racy high tech Cleveland may be to realise. "Harris wanted to get into new technology," recalls Mr Knight, "but the solutions they were getting from Cleveland were mechanical, not electrical."

Although the new $47m Eaton Center, the new $200m Sohio headquarters, and the new $80m TRW headquarters buildings, all in various stage of completion, may warm the hearts of the town's lawyers and auditors and doctors, it can sometimes seem as if these companies are tied to Cleveland by little more than sentiment.

Cleveland's publicists are quick to point out that the notion that multinational corporate headquarters could be sited anywhere in the U.S. works as much in the city's favour as anywhere else, but they are sensitive to the attractions of the southern and western parts of the country. "I can't think of any reason why the headquarters should go," says the Growth Association's Trutko, adding, unprompted, "sun is fine if you want to retire."

Quite what the benefits of service sector growth have been at the lower end of the economic scale is also unclear. Redundant manufacturing workers lucky enough to find new jobs have often been forced to take dramatic cuts in pay. One 50 year old former Eaton employee earning $12 an hour, now works at night for $4 an hour at what a close friend describes as "packing things."

Haunted

"There's a big gap between all the fancy statistics and what the real problems are," says one local government official in the generally working class suburb of Brook Park. While some of the suburb's unemployed have been recalled by nearby motor plants more than half of those who have found jobs have had to take heavy pay cuts in return, and most of these new jobs have been in the service sector.

The prospect of a "service" mentality taking root in Cleveland haunts Frank Valenta, director of the United Steel Workers District 28. "Sure we want an improvement in services but if there's no manufacture then there's nothing to service," he groans. "How long can we exist cutting each other's hair and doing each other's laundry?"

Among Cleveland's small scale manufacturers, sentiment about the fashionable new services runs close to contempt. "My doctor and lawyer friends think its wonderful to have a dollar that's 34 per cent overvalued," said one machine tool producer, "because they can go out and buy a Mercedes and spend a weekend in London and have a lot of fun."

There is some evidence to suggest that the powers that be in Cleveland are listening to the fears voiced by Valenta. Programmes to shore up industry are being discussed but essentially, he and other trade unionists, and many smaller manufacturers., worry about the speed with which the growth of services has been latched onto as either inevitable or desirable.

What most worries these groups is that the growth in services, whether advanced or basic, has been largely accidental.

To an extent, these fears are echoed by Dr Knight. "There is no strategy," he says, and the warning, left hanging in the air, is that the city is going to have to find ways to add some substance, and quickly, to all the talk of strengthening those remaining basic industries if the service industries do not find one day that they are being caried along on little more than a cushion of air.

It seems, however, that Cleveland, with its biggest department store making record profits last year with the first new car dealership opening downtown in more than a decade, and with new buildings rising in the centre, is going to find listening to the sceptics hard to do.

Cleveland Clinic provides spin offs

Health Care

PETER BRUCE

ON Thursday March 22 the first patients of the day were wheeled into operating theatres at the Cleveland Clinic just before 8.00 am. By the end of the day, surgeons had worked on 71 patients, a little below average, performing 10 heart bypass operations, restoring four hands, at least one kidney transplant, three mastectomies, repaired a damaged retina and extracted an impacted wisdom tooth.

At least one of the bypass patients spent the previous night in the Clinic Inn, a plush little resort in the grounds of what has grown to be the city's single biggest employer, before being sped into the theatre in the morning and by now, according to the clinic's law of average, could be back at work.

With some 32,000 admissions a year to its 1,008 staffed beds, in addition to seeing 500,000 outpatients, the Cleveland Clinic has become the centre of a sprawling healthcare network throughout the city, which now boasts some 34 other hospitals, with more than 10,000 beds, and, at the last count in 1981, at least 45 small clinics catering for anything from routine check ups to drive-in surgery.

It all started around 1921, when Cleveland became one of the first cities in the U.S. to have a group practice. The gathering of doctors proved to be stimulating particularly as goitres, which produced a massive swelling around the neck, seemed at the time to have reached serious proportions locally. While treatment of the goitre itself was not particularly difficult, removing the growths without massive damage to surrounding tissue was and the early clinic teams are still credited with pioneering what has come to be known as "less radical surgery" technique that has helped countless women come through mastectomy without severe damage to surrounding tissue.

Although the clinic's first successes were surgical, a Dr Irvine Page arrived at the hospital in the Forties, having begun to doubt the conventional wisdom of the day which held, basically, that high blood pressure was a good thing. Years earlier he had noticed a link between hypertension and heart disease and strokes and with colleagues at the clinic he began to look for ways to treat it.

Hypertension

Initial efforts led Dr Page and his researchers to one of the most insidious manifestations of high blood pressure—malignant hypertension. At least half of the sufferers succumbed to kidney failure, it seemed, and in the Fifties and Sixties doctors at the clinic began to relate this to blockages in the arteries around the kidney. This took researchers into vascular treatments and led to the construction of the world's first artificial kidney, a converted washing machine.

From there, the jump to maintaining whole body functions by mechanical means was relatively short, enabling surgeons to do early work in open-heart surgery. By the late Sixties, with so much interaction between disciplines at the hospital, accidents of good fortune were bound to happen.

The heart bypass operation was one, and came about when a cardiac surgeon strolled into a theatre to watch some colleagues rerouting an artery around a permanently damaged section of a kidney. The technique, he realised, could easily be applied to the heart. Nearly 30,000 bypass operations have been performed since the first in 1967.

The surgical successes, however, tend to overshadow the progress made in diagnostics during the research into cardio-vascular disease. The clinic developed the cardiac catheterisation technique in 1958 and it is now common throughout the world.

The foundation that runs the clinic does so on a non-profit basis but nevertheless does handsomely from it. Revenues last year amounted to more than $350m, with patients paying an average $295 a night. "Everybody comes here," boasts one official. The publicity handouts list, among others, the Kings of Saudi Arabia, Bhutan, Mary Pickford and the president of the Teamsters Union among past patients.

Ironically, the presence of a major health care centre in Cleveland, and other illustrious hospitals including Mount Sinai, has very little to do with the fact that two of the country's leading medical equipment manufacturers are also based in the city.

Picker International, part of Britain's GEC, and Technicare, part of Johnson and Johnson, are leading research into a ground-breaking diagnostic machine that threatens to make the much-fussed-over scanner obsolete in just a few years. The Nuclear Magnetic Resonance (NMR) technique does away with potentially harmful X-rays altogether and both producers have machines installed in Cleveland's hospitals for testing.

Picker, the older and larger of the two (with a turnover of some $700m compared with Technicare's $200m) has been in Cleveland for 40 years and came to the city not because of its hospitals but because of its machine shops, to which it still contracts out piecework on a range of medical equipment ranging from tables and beds to conventional X-ray machines.

The presence of both Picker and Technicare, and around 30 other smaller medical equipment suppliers, has encouraged some Cleveland strategists to muse about a new medical equipment industry flowing into the city. Not so, says one Ameritrust economist. For one, the growth in equipment is likely to be in smaller, lighter products that could easily be shipped into the market around Cleveland and, argue some local equipment manufacturers, Cleveland is already over-bedded. The State Government, concerned at the rising cost of health services in Ohio, has also imposed a moratorium on capital spending by local hospitals.

Strong base for law firms

Legal Services

PETER BRUCE

LEGAL FOLKLORE in Cleveland does not actually detail just how the city's lawyers have come to be as powerful as they are. One story has it that Andrew Squire, a founding partner of the city's biggest law firm, Squire Sanders and Dempsey, spoke at President William T. McKinley's funeral in 1901. Squire, it is said, claimed to have known four U.S. presidents on first name terms.

A more credible link to Washington, however, probably comes through Mark Hanna, local industrialist, Republican Senator and chairman of the Republican Party around the turn of the century. Squire knew Hanna, and it was most likely that links of this sort drew Cleveland lawyers into a partnership with the industries that were beginning to flourish around the city.

Washington was, anyway, too far away then for local lawyers to be able to profit from any *political work and Squire, a* business consultant, must have been happy with the business opportunities closer to home.

Industry, and a profusion of major corporate headquarters in the city, have spurred on almost embarrassing growth in legal service jobs in Cleveland. Between 1968 and 1980, for instance, law service employment rose nearly 85 per cent to some 5,000 people among Cleveland's firms, two of which—Squire Sanders and Jones, Day Reavis and Pogue—rank among the 10 biggest in the country.

The present chief at Squire Sanders, Mr George Meisel, clearly believes Cleveland is still a good place to be based in, even though the decline in manufacturing around the city has meant a decline in the amount of corporate legal work involved in union pay settlements. As the city's big corporations have shifted their manufacturing bases to the more attractive (and compliant) workforces of the south and west the legal work has piled up back at corporate headquarters.

Even those companies that have moved away have found the local law firms only too willing to follow them. Squire Sanders opened an office in Miami when Harris Corporation moved there and Jones Day followed Diamond Shamrock to Dallas. Tenacity like that has helped the two firms' annual billings to grow to around $50m a year, and that is a conservative estimate.

The two big firms have also spread themselves to other parts of the country. Predictably Columbus, Ohio's capital, has become an important location and at least four other Cleveland firms have operations there. Washington D.C., too, attracts plenty of lawyers, but Squire Sanders, with 307 lawyers on its staff, has also expanded to New York, to pick *up business on the financial* markets, and to Phoenix, Arizona—one Squire Sanders lawyer was forced to move there when doctors told his wife to move for health reasons. "After he was down there for a while he began to realise there was quite a market," says Mr Meisel.

An equally fortuitous event—one of the firm's lawyers in Washington married the Belgian Ambassador to the U.S.—led to the opening of an office in Brussels, where the company has since done work for Société Générale and has just appointed a lawyer to look for opportunities within the European Community.

Some 10 per cent to 15 per cent of total Squire Sanders billings now come from abroad, Mr Meisel says, though not all from the Brussels operation. He does feel, however, that the presence of the five partners in the Belgian capital offers a unique opportunity to potential European clients, especially those interested in doing business in the U.S.

"We don't represent ourselves as Belgian or European lawyers," he says. "We are an American law firm with a Belgian office." That position might not have been intentional at the start but a newly discovered advantage to Squire Sanders, he believes, is that while a number of the big New York law firms have European offices, they have little experience outside New York, and, perhaps, Washington.

Diversity helps to ride recession

Manufacturing Industry

PETER BRUCE

CLEVELAND HAS always been one of the powerhouses of manufacturing industry in the U.S. Its position on Lake Erie has placed it at the centre of the iron ore routes from northern Minnesota to the steel industry around Pittsburgh in the south.

It straddles the freight routes between the huge capital goods markets to the west and the consumer markets on the east coast. Probably to its lasting good fortunte, the early industrialists in Cleveland never could decide what industry to get into. It just seemed to be a good place in which to make things.

Some 42 per cent of Detroit's industrial employment is accounted for by the motor industry, and steel takes up to 39 per cent of the jobs going in Pittsburgh, but the biggest concentration of industrial jobs in Cleveland, 18 per cent, is in what could loosely be called machinery. Local economists are convinced that the manufacturing diversity implied in those comparisons has saved the city from even more damage than it has suffered during the recession.

Up to 65,000 manufacturing jobs are thought to have been lost since the recession began to bite in 1979, a fall of around 25 per cent. Although there are signs of an improvement — both Ford and General Motors have been recalling workers to their metropolitan Cleveland plants as demand for cars continues to grow throughout the country — Cleveland's industries have yet to benefit substantially from the national recovery.

The city's problem is that most of its manufacturing industries are concentrated in relatively mature areas; non-electrical machinery, steel, tools and fabricated metals. They are all highly susceptible to cycles and, though fundamental to any large national manufacturing economy, have only modest growth prospects.

Typically, the city and its surrounding industries have tended to produce components, not neccessarily for consumer products, but for producer goods and this has meant that the Cleveland manufacturers traditionally find themselves latecomers to any upturn in the national production cycle and early leavers.

"The effect is cumulative," says a recent report by the Cleveland State University's Urban Centre. "Each subsequent recovery fails to regain fully the employment lost in the previous recession." The decline has been relentless, although not always dramatic. In 1967, manufacturing industries employed 40 per cent of the workforce in the metropolitan area. There were recoveries in 1972 and 1976, but these same industries now employ only 25 *per cent.*

The most visible losses have come from the city's major industrial employers. Eaton has closed most of its manufacturing plants in the area. Republic Steel and Jones and Laughlin still have also cut back sharply on jobs, but it is almost impossible to gauge the effects of the recession on the hundreds of smaller machine shops, fabricators and machine tools builders that give real substance to *manufacturing in Cleveland.*

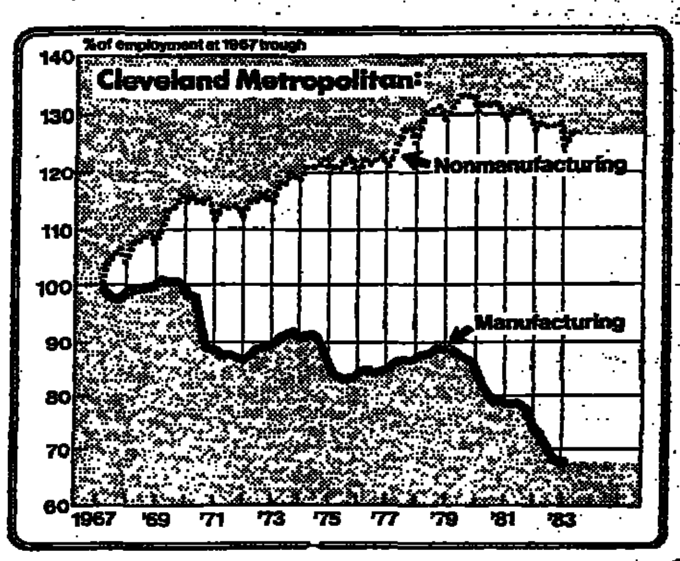
Accessories

There are about 420 companies making machine tools, dies, tools, jigs, fixtures or other machining accessories around the city. A quarter of them employ, at best, fewer than five people and more than two-thirds employ fewer than 20 pople.

Local steelworkers union leader Frank Valenta says he has counted 48 fabricating companies disappear during the recession. The Ohio Bureau of Employment Services estimates that employment in the metalworking machinery industries in metropolitan Cleveland fell between 1979 and 1982 to its lowest level since the end of the Sixties.

For the most part, however, the smaller machine shops have proved themselves to be very *flexible and resilient during* hard times. They are not organised by the unions and find it easy to lay off and rehire, when demand picks up, from a vast pool of experienced local machinists. The medium-sized fabricators and subcontractors face a different set of pressures. Most are locked into agreements with trade unions and survival through the recession has meant severe belt tightening.

"A lot of companies have brought down their breakeven points during the recession," says Mr James Trutko, an economist with the Growth Association. "We should be much more resilient. I think we are going to see a great deal of modernisation during this cycle and we won't only be modernising ourselves, we'll be helping other people modernise."



That holds true particularly for the tyre producers around Akron. Firestone's net income improved from $6m to $111m last year with virtually no change in turnover. Similarly, income at B.F. Goodrich reached $18.4m after a 1982 loss of $32.8m, while General Tire & Rubber's net profits rose 247 per cent on sales growth of just 6 per cent.

Some of the machinery companies have also found the necessary financial muscle to rationalise. At Bendix Automation, for example (recently sold by Bendix's new parent, Allied, to Cross and Trecker) where the old Warner and Swasey lathe group still form the core company, breakeven point has been reduced by around $100m according to its chief executive, Mr Fred Searby.

Bendix had closed two Cleveland machine tool plants and cut 1,000 local jobs while it controlled the group and Mr Searby expects Warner and Swasey and its associated companies to begin to turn last year's $60m losses into profits towards the end of the year. The other major local machine tool builder, Acme Cleveland, has also cut jobs and sought to diminish its exposure to the crowded conventional machine tool markets by buying a high technology laser system produced in California, despite a $32m loss last year.

Even further down the machine tool scale, some producers have managed to soften the effects of the recession by diversifying. Hill Acme for instance, a producer of customised machines, began making small valves in the Seventies and has found a lucrative niche in the scuba equipment market to help smooth over the machine tool cycles.

Republic Steel has cut its Cleveland workforce to around 5,000, from nearly 10,000 three years ago, and installed modern continuous casting equipment at its integrated Cleveland works. The $14m investment at the works, which sit just across the Cuyahoga river from a similar plant belonging to Republic's new parent, LTV, must have made it one of the most attractive plants in the merger between Republic and Jones & Laughlin Steel, the LTV steel subsidiary.

The two works are likely to begin loading much of the volume steels, chiefly for the motor industry, onto the Republic plant's caster, the only facility of its kind in the area, once the merger is completed.

While the merger of Republic and J & L may have saved the two companies plants in the heart of the city, Cleveland's steel industry, like that in the rest of the country, still has a lot of streamlining to do. U.S. Steel has begun to lay off people at its Cuyahoga Works in the run-up to the complete closure of the wire and strip mill and the fate of the U.S. Steel tube operations in nearby Lorain also hangs in the balance.

The steel tubes market, particularly in the once lucrative oil field markets, has all but disappeared in the past two years.

The shrinkage in iron and steel has not been confined to the intergrated steelmakers either. "Foundries have also been hit. "You cannot get large castings in Cleveland any more," complained one machine tool maker. "There used to be three or four."

Cleveland's business community, galvanised by the severity of the recession into addressing the problem of the city's industrial base, has come up with a three-point action plan to stop the rot and, conceding that the prospect of enticing new industry to the area from outside is remote, encourage new ventures from within.

Existing manufacturers are being encouraged to talk, at a senior level, with trade unionists, in an effort to arrive at joint strategies to increase competitiveness, and to modernise manufacturing procedures. The action plan, put together by the Cleveland Tomorrow Committee, chaired by Eaton chairman, Mr E. Mandel de Windt, has also proposed setting up a local productivity centre to enable businesses to share technical expertise.

A second aspect to the action plan would involve an attempt to foster the growth of new industries, largely through creating a mix of research and venture capital resources. Finally, the plan calls for the creation of a programme to address the causes contributing to the decline of industry around the city.

Labour costs high

The committee blames the decline of the city's manufacturing base almost entirely on high unit labour costs, a position which may make it that much more difficult for management to talk to the unions. Already there are signs in the city that even where union leadership is talking to the business community in an attempt to arrive at a consensus of sorts for future action, rank and file members are resisting calls for an end to restrictive practices.

"It was the management that agreed to our work practices when they were only too keen to see the merchandise move out the door," says one activist, "now they want us to roll over and hand it all back."

Union leaders are not likely to put their political careers on the block for the Cleveland Tomorrow programmes if they sense that their membership is not going to take them on board and the next year could prove to be the make or break period. Without union support, the schemes designed to buoy up the basic industries will probably fall by the wayside.

Mr Bill Seelbach, director of the Cleveland Tomorrow programme, believes however, that the message on costs will get through. "Labour management co-operation in the city's future is happening as it has never happened before," he says. "The smart (union) guys realise that they have got themselves into an untenable situation."

Two profiles which illustrate the contrasting fortunes of new and traditional industries. Reports by Peter Bruce

How Tecmar plugged into IBM

CAROLINE AND MARTIN Alpert ("Marty" to just about everyone) are the kind of people whom Cleveland's economists, its business leaders and its publicists dream about. In 1981 they formed the entire staff of their company, Tecmar, now located in a new $2m plant in one of the greenfield industrial areas that surround the city. Today, with sales estimated at more than $40m this year, there are 400 people on the payroll.

Tecmar make computer "add ons" the memory boards, disc drives, networking packages, video and graphics boards and some software and the company is now reckoned to be the biggest single source of peripherals and boosters to the IBM personal computer range.

Martin, with degrees in medicine and biomedical engineering, and Caroline, who gave up nursing to take an MBA at Case Western University in the city, began working on a device in 1974 to help diagnose lung diseases during a year at Clevland's University Hospitals.

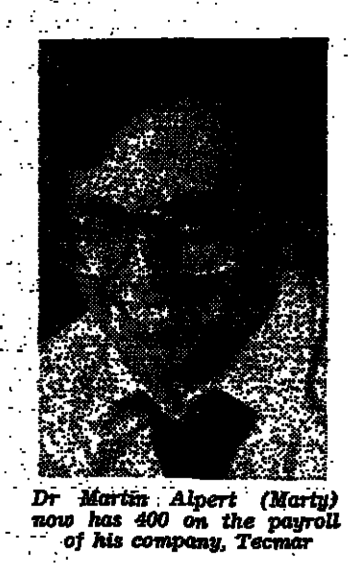
The Pulmonary Diagnostic Instrument (PDI) took the Alperts five years to build and though not taken seriously by the Cleveland medical establishment when they first began testing it on patients in 1979, their research was not wasted.

In building the PDI the Alperts had designed computer components, basically memory boards, not on the open market, and sales of these had taken their fledgling company (Tecmar stands for "Marty's technology") into the $50,000 a year league. The Alperts, however, had seen the IBM personal computer coming and, so the story goes, they bought the first two sold in the U.S. in October 1981.

The couple immediately began designing peripherals for the PC, taking their two new computers apart and designing interfaces in reverse. Six weeks later, at a computer exhibition in Las Vegas, the Tecmar add ons took the market by storm.

Although Tecmar now does peripherals for other computers, including Apple, the link with IBM has been critical and it is a close one, which probably solidified in 1982 when Martin informed IBM that three IBM executives had been trying to sell him new design secrets.

"Our market is the world," says newly-hired chief operating officer Henry Caplan. "Wherever the IBM PC is, so are we."



Dr Martin Alpert (Marty) now has 400 on the payroll of his company, Tecmar

Caplan's arrival probably marks the beginning of a new phase in Tecmar's growth. It does at least coincide with the fact that the 35 per cent to 40 per cent growth in sales every month for the past 30 months has begun to fall away. "The way you deal with that is to bring in guys like me," he says.

Caplan, an experienced computer industry executive and certainly older than the two Alperts, both of whom are in their early thirties, says the company had to borrow money for the first time ever recently and probably needs to go public.

"I want us to be as big as possible," he says, "but not monolithic. We have no bureaucracy here and we can move quickly." What the Alperts, and Caplan, clearly have in mind is expansion, either through acquisition or on their own. A head of international operations has just been appointed to Brussels and the company is looking for its exports business to grow to around 35 per cent of total sales.

Machine tool decline hits Hygrade

THERE ARE at least 150 companies, employing fewer than 10 people, making jigs, tools, fixtures and dies in Cleveland and they are almost all in trouble. Hygrade Machine and Tool is one of them. Typically, it is a family business and typically, it has not had a month in the black for nearly a year.

Hygrade, run by Joseph Liptak, 70, and his sons Joel, 40 and Leonard, 34, has been making jigs and fixtures in Cleveland since 1946. Joel says his father has never seen business so bad. "He's never had to lay people off before," he says, "and that really hurt him."

Until three years ago, says Joel, business was like water running from a tap. "Then it just turned off." Like many of Cleveland's job shops Hygrade are able to supply the city's machine tool or component producers with one off pieces of machined metal simply too time consuming to be done in house. But in the space of three years or so the Liptak family have seen their customer base virtually disappear.

Chiefly, it was the purchase of Warner and Swasey, the lathe makers, by Bendix, and the *closure of Caterpillar's lift* truck plants in the area that accounted for most of the customer losses. "About half our business then," says Joel.

The Liptaks have not bought a new machine tool since the slide began. They're down to six men in the machine shop, from a high of 18 three years ago and there seems to be no end to the recession. "There's no sign of a recovery," he says. "Anyway, we're always the last to get it.

"We've lost money every month since October. Right now we're not even drawing much of anything (the few designers are being kept busy revising old Caterpillar lift truck drawings for use, eventually, by a licensee in Korea). The few places being machined in the largely idle machine shop have been taken on even though they'll lose money on them.

It would be suicide for the Liptaks to turn down even loss-making work. Down at the bottom of the manufacturing process, they depend heavily on relationships with a select band of customers and the strength of Cleveland's machine shops lies in their being able to take on work at short notice.

"People wait so long to go ahead with new projects," says Joel, "but when *it comes it* can come so fast. What do you do?"

Get out and look for new business? Hygrade never really had a salesman when Warner and Swasey, and Caterpillar (Towmotor to the Liptaks) and Addressograph Multigraph were still out there. "If there was any trouble then father would go round," says Joel.

Locked in

It seems, too, that Hygrade is firmly locked into the customised business. "Every time we try to do anything in bulk we get killed," he says. More out of politeness than hope he quoted on a job last month that involving producing six small pieces. The customer called up to say he had come in twice as high as the winning bid. "I told him that normally we wouldn't have quoted him on that. It makes us look bad."

Joseph Liptak, apparently stubbornly refusing to retire, has often warned his sons about getting into volume production of any kind. "He's told us to stick with one thing," says Joel. "'You're going to start mucking about with things that are foreign to you, that you know nothing about, and you're going to go under.'"

Conservatism of that sort is what has sustained Cleveland's small machine shops until now. Several large manufacturing groups have based operations around the city precisely because the job shops are there and because they have always been able to adapt to quick one-off orders that require special tooling. Quite where they fit into the futuristic visions of Cleveland's planners is anybody's guess but the Liptaks are a dwindling breed.

"I'm waiting to see what the summer holds out," says Joel. This is in itself a sign of the times as summer has traditionally been a slack period for the company. "We were down to four days a week, seven hours a day in December, but there are dribbles coming in. How much longer before the flood comes in I don't know. We work from day to day."

For a little company deemed good enough by some of its customers to have once worked on jigs for the B1 bomber and the F-18 fighter, the smart buildings being planned along the Cuyahoga river and the political swirl over whether to build a $200m domed sports stadium must seem an age away.

Hygrade had to move out of the city at the beginning of the year, after their lease expired. The move to a suburb cost a precious $10,000. Nobody from Cleveland City Hall tried to persuade them to stay.

Closing prices April 6

NEW YORK STOCK EXCHANGE COMPOSITE CLOSING PRICES

12 Month High	12 Month Low	Stock	Div.	Yld.	P/E	Sls 100s	High	Low	Close Quote	Ch'ge Prev. Close
20¾	10½	AAR	.44	2.2	20	88	20	19¾	19¾	-¼
52¾	31	ACF	1.40	2.7	42	387	51¼	51⅛	51⅞	+½
22	15½	AMCA	n 1	5.8		2	17⅜	17⅜	17⅜	
18¾	13½	AMF	.50	3.7		148	13⅝	13½	13⅝	
41¼	25¼	AMR Co			6	7480	31½	30	30⅞	-⅛
20⅜	17⅛	AMR	pf2.18	12.		82	19	18⅞	18⅞	
41½	29⅝	AMR	pf2.13	6.5		388	33⅛	32½	32½	-1¼
26¼	23½	ANR	pf2.67	11		1	23⅛	23⅛	23⅛	
23⅞	19½	ANR	pf2.12	9.9		1	21⅜	21⅜	21⅜	-⅛
16¾	5½	APL			3	296	11⅜	11¼	11⅜	+⅛
55⅞	41½	ARA	2.05	4.9	9	1205	42⅛	d41¼	41½	
77¼	50¼	ASA	3a	4.7		291	63⅛	63⅛	63¾	+⅝
33¾	16⅛	AVX	s .32	1.7	19	3805	19	17	19	+⅝
53⅞	38⅝	AbtLab	1.20	3.0	14	2595	40⅝	39¾	40½	+½
30⅝	23⅛	AccoWd	.60	2.3	18	38	26½	26¼	26¼	-⅛
27½	19⅛	AcmeC	.40	1.9		100	21	20⅞	21	+⅛
13	9⅝	AcmeE	.32b	3.2	63	147	10⅛	10	10⅛	+¼
24⅞	12⅞	AdmDg	.04	.3	8	120	13½	13⅛	13⅛	-⅛
18⅞	15⅛	AdaEx	2.11e	14.		90	15⅛	15⅛	15½	-⅛
19¼	9	AdmMl	.28	1.5	9	23	18⅜	18⅜	18⅝	-¼
22	12⅛	AdvSys	.80t	4.9	14	24	16¼	16⅛	16¼	-½
18⅞	8⅝	Advest	.12	1.2	9	77	10	9½	10	+⅛
37½	15½	AMD	s		34	6068	28⅛	27	27¼	+1
24⅞	12½	Aerflx	s		14	34	13⅞	13½	13⅞	
43½	33⅛	AetnLf	2.64	7.0	11	1864	37⅞	37¼	37⅞	+⅜
59¼	54⅜	AetL	pf5.28e	9.4		13	56⅛	56⅛	56⅞	+⅛
40½	20	Ahmns	1.20	5.9	6	2801	20¾	20	20½	+⅛
7⅞	3	Aileen				40	4	3⅞	3⅞	

Continued on Page 31

حكذا من الأصل

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AMERICAN STOCK EXCHANGE COMPOSITE CLOSING PRICES

Closing prices April 6

12 Month High	Low	Stock	Div.	Yld.	P/E	Sls 100s	High	Low	Close Quote	Ch'ge Prev. Close
4⅞	1¼	ATI				28	1½	1⅜	1½	+⅛
64	58¼	ATTFd	n.46a	.8		141	59¾	59½	59½	
12¾	3½	AcmePr				24	3⅝	3½	3⅝	
18½	12⅞	AcmeU	s.32	2.4	13	15	13⅝	13⅜	13⅜	+⅛
14⅞	8⅛	Action	s		9	272	13⅜	12⅞	13	−½
12	6⅛	Actoner	.12	12.		114	6½	6⅛	6⅛	−⅛
6½	1⅛	Acton	wt			5	2½	2⅜	2½	
8	2¾	AdmRs			.4	80	3	2⅞	3	+¼
30½	15⅜	AdRusl	s.10	.6	10	148	16¼	16	16¼	
28⅞	15	Adobe	.24	1.1	16	78	22¼	21⅞	22¼	+⅝
5⅞	3	AeglCp			17	3348	5	4⅝	5	+1¼
7	4	Aeronc			4	19	5	4⅞	4⅞	
32½	20	AlHlsp	.40	1.8	9	8	22⅞	22⅝	22⅞	
45	30⅛	AlPub	.80	2.0	14	4	39⅞	39½	39⅞	
17½	9½	AirStx	.05e	.5	8	21	10⅜	10½	10⅞	+⅛
15½	5⅞	AirExp				31	6½	6⅜	6½	+⅛
6⅛	4	Alamc	B		9	39	4⅞	4⅞	4⅞	
23⅞	11⅞	AlbaW	.20e	1.7	6	46	11⅞	d11⅝	11⅞	−⅛
10½	5⅝	Alpha	.48r	6.5		5	7⅜	7⅜	7⅜	
28⅛	12¾	Alphaln	.05	.4	16	59	13¾	13⅝	13⅝	−⅛
2⅞	1⅛	Altex				45	1⅜	1¼	1¼	
11-16	⅛	Altex	wt			61	5-16	¼	5-16	
35½	31	Alcoa	pf3.75	12.		z200	32½	32	32½	
32½	11⅛	AlzaCp				11778	13⅛	12½	12⅞	−⅛
29⅞	11⅞	Amdhl	s.20	1.5	14	2363	13⅞	12⅞	13	+⅞
25⅞	9⅛	Amedco	.08	.5	16	67	15⅞	14⅞	15⅞	−⅛
7½	4½	AmBlt	.15	2.9	12	8	5¼	5⅛	5¼	
9⅝	2⅜	AmCap								

Continued on Page 32

NEW YORK STOCK EXCHANGE COMPOSITE CLOSING PRICES

Continued from Page 30

12 Month High	Low	Stock	Div.	Yld.	P/E	Sls 100s	High	Low	Close Quote	Ch'ge Prev. Close
28½	22¼	WiscEP	2.10	7.9	7	231	26¾	26¼	26½	
85	74	WisE	pf8.90	12.		z300	75	74½	75	
73¼	62½	WisE	pf7.75	12.		z210	65	64	65	
26	23⅝	WisG	pf2.55	10		1	24½	24½	24½	−⅛
29½	23	WiscPL	2.48	9.3	7	189	27	26⅜	26¾	+⅛
30½	22⅝	WiscPS	2.32	9.5	8	144	25¼	24½	24½	−⅛
39½	21⅝	Witco	s1.32	4.2	9	113	31⅞	31½	31½	−⅞
29¼	14⅛	WolvrW	.48	3.0	16	1463	16⅜	15¾	16¼	+½
45½	29½	Wometc	.44	1.0	26	294	u45⅝	45½	45½	
29½	21½	WoodPt	.72	3.1	20	51	23½	23¼	23¼	−¼
39⅞	30¼	Wolwth	1.80	5.9	8	748	30⅝	30¼	30½	−⅛
7⅛	3⅝	WrldAr				110	5¼	5⅛	5⅛	−⅛
57¼	44¼	Wrigly	1.80	3.9	9	9	46⅜	46⅛	46⅜	−⅜
8⅞	4½	Wurltzr				9	5⅞	5⅞	5⅞	−⅛
25⅞	12⅞	WyleLb	.32	2.1	15	296	15⅜	14¾	15⅛	−⅛
17⅞	9	Wyly				73	10½	10¼	10⅜	−⅛
22¼	14⅛	Wynns	.60	3.4	10	56	18	17½	17⅝	−⅝
		X-Y-Z								
52⅞	39	Xerox	3	7.5	9	1948	39¼	39	39⅛	+¼
53⅝	47½	Xerox	pf5.45	12.		1	47⅛	47⅛	47⅛	
37	21⅞	XTRA	.68	2.8	11	323	23¼	22¼	23	−1
34	24	ZaleCp	1.25	4.9	10	7	25⅜	25⅜	25⅜	−⅛
23⅞	15	Zapata	.84	3.9	11	610	21⅞	21½	21⅞	+⅛
52¼	31⅛	Zayre	s.40b	1.2	10	647	34¼	33½	33½	−¼
38⅞	15½	ZenithR			12	984	27¼	26¼	27	+¼
27⅞	19¾	Zero	s.36	1.7	18	18	21	20½	20⅞	
37⅛	22	Zumin	1.32	6.0	10	68	22⅛	d21¼	22	−¼

Sales figures are unofficial. Yearly highs and lows reflect the previous 52 weeks plus the current week, but not the latest trading day. Where a split or stock dividend amounting to 25 per cent or more has been paid, the year's high-low range and dividend are shown for the new stock only. Unless otherwise noted, rates of dividends are annual disbursements based on the latest declaration.

a–dividend also extra(s). b–annual rate of dividend plus stock dividend. c–liquidating dividend. cld–called. d–new yearly low. e–dividend declared or paid in preceding 12 months. g–dividend in Canadian funds, subject to 15% non-residence tax. i–dividend declared after split-up or stock dividend. j–dividend paid this year, omitted, deferred, or no action taken at latest dividend meeting. k–dividend declared or paid this year, an accumulative issue with dividends in arrears. n–new issue in the past 52 weeks. The high-low range begins with the start of trading. nd–next day delivery. P/E–price-earnings ratio. r–dividend declared or paid in preceding 12 months, plus stock dividend. s–stock split. Dividends begins with date of split. sls–sales. t–dividend paid in stock in preceding 12 months, estimated cash value on ex-dividend or ex-distribution date. u–new yearly high. v–trading halted. vi–in bankruptcy or receivership or being reorganised under the Bankruptcy Act, or securities assumed by such companies. wd–when distributed. wi–when issued. ww–with warrants. x–ex-dividend or ex-rights. xdis–ex-distribution. xw–without warrants. y–ex-dividend and sales in full. yld–yield. z–sales in full.

WORLD STOCK MARKETS

OVER-THE-COUNTER

Nasdaq national market, closing prices April 6

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Continued on Page 33

AMERICAN STOCK EXCHANGE CLOSING PRICES

Continued from Page 31

[illegible]

CANADA

TORONTO

Closing prices April 6

[illegible]

MONTREAL

Closing prices April 6

[illegible]

AUSTRIA

1983/84 High	Low	April 6	Price %
222	206	Credit'stalt Pfd.	213
370	181	Goesser	325
417	358	Interunfall	407
221	201	Laenderbank	212
400	255	Perlmooser	347
179	146	Steyr—Daimler	160
262	171	Veitscher Mag	213

BELGIUM/LUXEMBOURG

1983/84 High	Low	April 6	Price Frs.
1,660	990	ARBED	1,620
6,200	3,700	Banq Int A Lux	5,200
4,480	2,030	Bekaert B	3,440
2,295	1,595	Ciment CBR	2,260
275	86	Cockerill	266
5,850	3,660	Delhaize	4,990
2,605	1,875	EBES	2,605
6,690	4,460	Electrobel	6,500
2,900	1,910	Fabrique Nat	2,115
3,595	2,710	GB Inno BM	3,230
2,600	1,450	GBL (Brux)	2,500
5,330	1,740	Gevaert	3,220
6,480	3,600	Hoboken	5,200
2,060	1,720	Intercom	2,050
7,320	4,300	Kredietbank	7,000
9,850	4,300	Pan Hldgs	9,850
7,500	4,610	Petrofina	7,500
8,400	5,910	Royale Belge	8,400
3,415	2,305	Soc. Gen. Banq	3,405
2,025	1,200	Soc. Gen. Belge	1,840
5,860	3,755	Sofina	5,750
4,365	2,180	Solvay	4,070
3,650	2,645	Tractionel	3,600
5,450	2,620	UCB	5,090
4,940	2,210	Vieille Mont	4,340

DENMARK

1983/84 High	Low	April 6	Price Knr. %
556.4	320	Aarhus Olie	360
362	160	Andelsbanken	238
706	321	Baltic Skand	644
350	178.6	CopHandelsbank	216
665	296.6	D. Sukkerfab	635
335	150	Danske Bank	219xr

[illegible]

FRANCE

[illegible]

GERMANY

[illegible]

ITALY

[illegible]

NETHERLANDS

[illegible]

NORWAY

1983/84 High	Low	April 6	Price Kroner
167	101.5	Bergens Bank	157.5
340	83	Borregaard	317.5
182.5	112.5	Christiania Bk	158
176	117	Den Norsk Credit	167.5
169	57.5	Elkem	167
316	106	Norsk Data	275
607	272.5	Norsk Hydro	596
246	127.5	Storebrand	227.5

AUSTRALIA

1983/84 High	Low	April 6	Price Aust. $
5.64	3.02	ANZ Group	5.66
1.72	0.75	Acrow Aust	1.8
1.18	0.51	Alliance Oil D	0.78
2.10	1.25	Ampol Pet	1.7
1.94	1.06	Aust Cons Ind	1.9
3.1	2.20	Aust Guarant	2.57
2.90	2.07	Aust Nat Inds	2.6
2.50	1.72	Aust Paper	1.98

[illegible]

SINGAPORE

[illegible]

SWEDEN

[illegible]

SWITZERLAND

[illegible]

HONG KONG

1983/84 High	Low	April 6	Price H.K.$
33.25	15.5	Bank East Asia	24.3
10.9	5.7	Cheung Kong	9.55
17.0	9.9	China Light	12.7
3.30	1.27	Hang Lung Devel.	2.7
54.7	28.9	Hang Seng Bank	39
7.4	4.4	HK Electric	6.9
4.70	2.47	HK Kowloon Wh.	4.2
5.00	2.25	HK Land	3.5
9.7	2.4	HK Shanghai Bk.	9.2
49	26.5	HK Telephone	42.5
18.9	8.00	Hutchison Wpa	17.4
16.1	7.2	Jardine Math	10.8
4.02	2.00	New World Dev.	3.5
3.0	2.22	Orient O'seas	2.67
5.1	2.5	O'seas Trust Bk.	3.4
6.3	4.05	SHK Props	7.35
21.	17.2	Swire Pac A	18.8
4.2	2.32	Wheel'k Mard A.	3.65
2.40	1.55	Wheel'k Maritime	2.3
2.6	1.55	World Int. Hldgs.	2.32

JAPAN

1983/84 High	Low	April 7	Price Yen
1,170	806	Ajinomoto	1,050
2,840	1,610	Alps Electric	2,600
1,390	616	Amada	1,190

[illegible]

SOUTH AFRICA

[illegible]

SPAIN

[illegible]

NOTES—Prices on this page are as quoted on the individual exchanges and are last traded prices. [illegible]

مكتبة الأمين

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WORLD STOCK MARKETS

OVER-THE-COUNTER

Nasdaq national market, closing prices April 6

Continued from Page 32

Stock	Div.	Sales (Hnds)	High	Low	Last	Chng
MicrMk		25	10¾	10¾	10¾	
Mercdy	.05	45	8¼	7¾	7¾	−¼
Microp		134	9½	9	9½	
MicrSm		141	5⅝	5½	5⅝	+⅛
MdStFd	.30e	201	34⅝	24	24	−¼
MidBk	2	21	46½	45¾	46½	+¾
MdwAir		591	6⅛	6⅛	6⅛	−⅛
MdwCs		1245	2⅛	1⅝	1⅞	−¼
MillTch		5	3⅛	3⅛	3⅛	−⅛
MillHr s	.36	441	21⅞	21½	21½	−½
Millipr	.40	490	34⅞	33¾	33¾	−1
Minstr s		3307	11½	10⅞	11½	+⅛
NickOG		168	4⅛	4	4⅛	
NielsA	.76	x706	30	29½	30	+½
NielsB	.76	x123	29	28¼	28¾	+⅜
Nike B	.10e	1386	10⅛	9⅞	10	−⅛
Nordst s	.40	67	29⅛	28⅝	29⅛	+⅛
Norstan		38	8½	8½	8½	
NAtlln s		133	9⅝	9⅝	9⅝	−⅛
NwNG	1.36	85	13¾	13⅛	13⅛	
NwNLf	1.50	66	37⅛	36¼	35¾	−1½
Nowmtx		2	6¼	6¼	6¼	+½
Noxell	.76	191	33½	32¼	32¾	−⅛
NuclPh		254	8	7¾	8	−⅛
Numerx		115	9⅝	8¾	9	−½
PeaHl		3312	15½			
Penter s	.75	21	25⅛	25⅛	25⅛	−¼
PeopE s		1046	14⅛	13⅞	13⅝	−⅜
PeopRt		148	3½	3⅜	3⅜	−⅛
Perpept		4	10	9½	10	+⅛
Petrite	1	56	27¼	26¾	26¾	−½
Phrmct		228	11¼	9½	10¼	−½
PSFS		805	7¾	7¾	7½	−⅛
PhnMat		6	2½	2¼	2½	
PicSav s		1335	15⅞	16½	16½	−⅛
PicCafe	.60	635	18¼	17¾	18	−⅛
PionHi	.72	46	29½	29¼	29¼	−⅛
PionStd	.22	60	22½	22¼	22¼	+¼
vjPizzT		517	2⅛	2	2	
RgcyE s	.20	757	8½	8⅛	8¼	−⅛
Regis	.15	1	27½	27½	27½	−¼
Rehab		30	11⅞	11⅞	11⅞	
Reiab		22	10⅞	9⅞	9⅞	−⅜
RpAuto	.44	2	9⅞	9⅞	9⅞	+⅛
RpHlth		114	11	10½	10⅝	−⅛
Reuter		53	11½	11⅛	11½	
Rexon		35	10	9⅞	9⅞	−⅛
Ribim		18	7⅞	7⅞	7⅞	+⅛
Rival	.80	239	10⅞	10	10⅝	+¼
RoadS	2	660	52¾	51⅜	52¾	−⅜
Rockcor		279	10⅝	10¼	10⅝	
Rouse	.32	30	32	31¼	31¼	−¼

Indices

NEW YORK — DOW JONES

	Apr. 6	April 5	Apr. 4	Apr. 3	Apr. 2	1983-84 High	1983-84 Low	Since Compiltn High	Since Compiltn Low
♦ Industr'ls	1132.22	1130.55	1149.56	1148.76	1155.16	1287.20 (29/11)	1027.04 (3/1/83)	1287.20 (29/11/83)	41.22 (2/7/32)
H'me Bnds	68.09	68.32	—	68.41	68.67	77.84 (5/5)	68.09 (6/4/84)	—	—
Transport	464.16	465.33	501.65	505.54	506.15	612.53 (19/1/84)	432.24 (3/1/83)	612.53 (6/1/84)	12.32 (8/7/32)
Utilities	125.43	124.96	126.11	125.87	126.16	49.70 (31/10)	119.51 (3/1/83)	165.32 (20/4/69)	10.5 (28/4/42)
Trading Vol 000-†	86,620	101,75	92,880	87,980	86,680	—	—	—	—

♦ Day's high 1157.87 (1156.83) low 1128.35 (1141.02)

	Mar. 30	Mar. 23	Mar. 16	Year ago (approx
Industrial div. yield%	4.74	4.79	4.67	4.85

STANDARD AND POORS

	Apr. 6	April 5	Apr. 4	Apr. 3	Apr. 2	1983-84 High	1983-84 Low	Since Compil'n High	Since Compil'n Low
Industr'ls	175.86	175.37	178.22	178.34	180.29	194.84 (10/10)	154.86 (3/1/83)	194.84 (10/10/83)	3.52 (30/6/32)
Comp's'te	155.48	158.04	157.58	157.81	158.25	172.65 (10/10)	138.34 (3/1/83)	172.65 (10/10/83)	4.40 (1/6/32)

	Apr. 5	Mar. 29	Mar. 21	Year ago (approx
Industrial div. yield %	4.65	3.97	4.00	4.30
Industrial P/E ratio	11.20	12.25	12.13	12.94
Long Gov. Bond yield	12.57	12.37	12.37	10.46

N.Y.S.E. ALL COMMON

Apr. 6	Apr. 5	Apr. 4	Apr. 3	1983-84 High	1983-84 Low
89.46	89.33	90.71	90.79	99.63 (10/10)	90.92 (24/1/83)

Rises and Falls

	Apr. 6	Apr. 5	Apr. 4
Issues Traded	1,993	2,002	2,003
Rises	607	381	677
Falls	922	1,248	854
Unchanged	464	373	472
New Highs	—	—	—
New Lows	—	—	—

MONTREAL

	Apr. 6	April 5	Apr. 4	Apr. 3	1983-84 High	1983-84 Low
Industrial	417.47	419.49	424.74	427.02	488.86 (26/8)	321.19 (4/1/83)
Combined	385.38	395.32	398.41	400.72	441.29 (26/8)	323.12 (4/1/83)
TORONTO Composite	2315.39	2316.2	2347.9	2355.5	2598.2 (26/6)	1948.6 (4/1/83)

NEW YORK ACTIVE STOCKS

Thursday	Stocks traded	Closing price	Change on day
Chrysler	2,308,300	22½	+ ½
AT & T	1,655,000	15⅝	+ ⅛
Fannie Mae	1,609,200	13½	− ⅜
Am. Med. Int.	1,437,900	24⅛	− ⅛
IBM	1,296,000	109⅝	+1
Gulf Oil	1,096,000	77⅝	—
P. Svc. Col.	1,090,500	17½	—
General Motors	956,800	62⅝	+ ½
Carter Hawley	929,800	28½	—
Superior Oil	914,100	41⅝	—

	April 6	April 5	Apr. 4	April 3	1983/84 High	1983/84 Low
AUSTRALIA						
All Ord. (1/1/80)	756.1	756.5	751.2	744.5	787.9 (9/1/84)	487.8 (4/1/83)
Metals & Minls. (1/1/80)	533.7	530.7	534.7	526.1	614.2 (5/8)	411.9 (4/1/83)
AUSTRIA						
Credit Aktien (2/1/62)	54.89	54.97	55.22	55.50	58.8 (5/5)	45.48 (15/2/83)
BELGIUM						
Belgian SE (31/12/63)	150.58	150.09	148.82	147.07	150.58 (6/4/84)	109.90 (4/1/83)
DENMARK						
Copenhagen SE (3/1/83)	(u)	185.47	182.67	182.09	225.21 (20/1/84)	100.00 (3/1/83)
FRANCE						
CAC General (31/12/82)	167.90	167.8	168.2	164.5	175.1 (25/1/84)	96.1 (3/1/83)
Ind Tendance (30/12 83)	106.8	106.9	105.8	106.5	114.7 (25/1/84)	99.4 (3/1/84)
GERMANY						
FAZ-Aktien (31/12/58)	345.12	348.29	348.61	349.50	378.84 (2/2/84)	241.89 (25/1/83)
Commerzbank (1/12/53)	1012.4	1016.0	1018.2	1025.9	1098.5 (2/2/84)	727.8 (25/1/83)
HONG KONG						
Hang Seng Bank(31/7/64)	1064.32	1063.67	(c)	1083.10	1170.55 (13/3/84)	690.06 (4/10)
ITALY						
Banca Comm Ital. (1972)	215.69	216.13	214.78	215.52	229.57 (6/1/84)	166.46 (10/1/83)
JAPAN **						
Nikkei-Dow (16/5/49)	10914.78	10932.9	11002.0	10933.8	11,050.19 (2/4/84)	7965.10 (25/1/83)
Tokyo SE New (4/1/68)	856.51	866.85	870.24	867.70	876.82 (2/4/84)	574.51 (25/1/83)
NETHERLANDS						
ANP-CBS General (1970)	169.5	162.3	162.5	162.8	178.9 (1/2/84)	100.1 (4/1/83)
ANP-CBS Indust (1970)	129.4	130.7	130.4	131.1	147.2 (1/2/84)	85.5 (4/1/83)
NORWAY						
Oslo SE (4/1 83)	266.14	266.24	282.44	283.95	288.93 (2/4/84)	99.61 (4/1/83)
SINGAPORE						
Straits Times (1966)	994.36	994.44	989.28	981.76	1071.91 (8/2/84)	712.29 (5/1/83)
SOUTH AFRICA						
Gold (1958)	(c)	(u)	892.5	886.00	1069.5 (1/2/83)	881.4 (1/11)
Industrial (1958)	(c)	(u)	1052.5	1055.1	1081.1 (22/3/84)	794.9 (6/1/83)
SPAIN						
Madrid SE (30/12/83)	115.43	116.59	116.86	117.68	120.40 (6/3/84)	100.00 (30/12/83)
SWEDEN						
Jacobson & P. (1/1/58)	1585.61	1572.89	1564.86	1575.15	1584.5 (6/3/84)	896.10 (3/1/83)
SWITZERLAND						
SwissBankC pn.(31/12/58)	370.4	371.5	370.50	388.8	388.7 (3/1/84)	294.4 (4/1/83)
WORLD						
Capital Intl. (1/1/70)	186.3	—	187.7	187.7	189.8 (30/5/84)	154.3 (3/1/83)

** Saturday March 31. Japan Nikkei-Dow 10,968.41. TSE 871.32.
Base values of all indices are 100 except Australia All Ordinary and Metals—500. NYSE All Common—50; Standard and Poors—10; and Toronto—1,000; the last named based on 1975. † Excluding bonds. ‡ 400 Industrials. § 400 Industrials plus 40 Utilities, 40 Financials and 20 Transports. c Closed. u Unavailable.

BUILDING

CONSTRUCTION CONTRACTS

Robert McAlpine £11m Scottish academy order

A contract worth more than £11m has been won by SIR ROBERT McALPINE AND SONS for the construction in Glasgow of the new Royal Scottish Academy of Music and Drama. Situated on a 10,200 sq metre site bounded by Cowcaddens Street, Renfrew Street and Hope Street, the loadbearing brickwork and structural steel framed building will contain four theatres, a television studio, workshops, and practice rooms as well as a library, common rooms and restaurant facilities. There will be 15,000 sq metres of floor space. Emphasis will be on sound insulation and acoustics. Work starts at once for completion by the summer of 1987.

*

Orders worth more than £4m have been won by HEYWOOD GLAZING SYSTEMS, the patent glazing and curtain walling subsidiary of Heywood Williams Group. The major contract, worth £1.6m, is at the Manchester City Centre exhibition complex on the site of the old Central Station. It includes more than 7,000 sq metres of patent glazing and a further 3,000 sq metres of curtain walling. A contract for Plessey Telecommunication, valued at £400,000, involves refurbishment of an existing office block at Liverpool. In Carlisle, the company has a city-centre redevelopment contract valued at £425,000 using continuous patent glazing. Other contracts worth between £270,000 and £100,000, include work for J. Sainsbury, Leeds and Bradford Airport, Motorola, East Kilbride and a glass assembly project at Waverley Market, Princes Street, Edinburgh.

*

STENT FOUNDATIONS, part of Balfour Beatty, has secured over £4m-worth of foundation work in the UK, Thailand and the Middle East. In Thailand its associate company Stent Seafco has been awarded two contracts totalling £1.5m. The major contract is for large diameter bored piles to the Landmark project, a hotel and office development. The piles of up to 1.2 metres diameter will be constructed down to depths of 55 metres.

The Middle East work includes two contracts in Dubai for installing bored piles using direct mud circulation techniques. The first is piling for a multistorey car park for Dubai Municipality, and the other 300 piles for a commercial and residential development for Obaid Humaid al Tayer. In Abu Dhabi, Stent has commenced piling for another section of the transport and road improvement programme for the Abu Dhabi Municipality. In Qatar work has started on piling valued at £500,000 for the Qatar National Cement Co headquarters and a commercial development for H.H. Sheikh Hamad bin Dhalid. A major piling contract has been obtained from Karime-Fysko JV for an office block in Juffair, Bahrain.

Stent has commenced piling work on the M25 Swanley to Sevenoaks section being carried out by John Laing Construction. The contract is for construction of 600 mm and 750 mm diameter piles and is valued at around £400,000. At Surrey Docks the company is carrying out a vibrocompaction contract worth £163,000. A drilling and grouting contract valued at £250,000 at Iver in Bucks has been awarded by Thyssen. The drilling and grouting is to facilitate driving a tunnel in unstable ground.

*

Work has started on two McCARTHY & STONE warden-assisted sheltered homes schemes. Homebank House, a £1.5m 59-home development, is being built in Bidston Road in Oxton, Birkenhead, for completion in April 1985. And at Orton Township Centre, Peterborough, 46 homes are being built under a £1.1m development due for completion next February.

*

BALFOUR BEATTY CONSTRUCTION (BBC) has won orders worth £5.65m. The first, valued at £1.77m, comprises construction of a reinforced concrete building frame as part of the Quadrant Development, Redhill, being managed for the Norwich Union Life Assurance Society by John Mowlem & Co. Work is due to start soon with an eight-month construction period. The second contract, placed by London & Metropolitan Estates, has a value of £3.28m, and is for a high technology industrial development at Hatton Cross, adjacent to Heathrow Airport. Work involves construction of three units.

*

Building work on the Gifford Park Primary Combined School is under way. The school and community annexe are part of a £900,000 project being carried out by JOHN WILLMOTT (BEDFORD), part of the Bedfordshire-based John Willmott Group of Companies. The building is due to be finished at the end of the year.

Gatwick North Terminal frame

A contract worth over £5m has been won by CLEVELAND REDPATH ENGINEERING for the supply and erection of the structural frame of Gatwick Airport's North Terminal. About 9,000 tonnes of structural steelwork, supplied by the British Steel Corp, will be fabricated at Darlington, Manchester and Glasgow. This will be used to form the frame of a three-storey main block with two additional steel-framed structures housing plant and situated above general roof level. The 140 metre by 140 metre building has been designed on a 10.8-metre grid. Another subsidiary, Dorman Long Bridge & Engineering, will undertake the erection of the structure in the summer of 1984 with a programme completion target of 13 months. Main contractor is French Kier Construction for British Airports Authority. Cleveland Redpath Engineering is a Trafalgar House Group company.

French Kier £11.7m batch

FRENCH KIER CONSTRUCTION, a member of the French Kier Group, has been awarded contracts totalling £11.7m during March. They include construction of the A45 St Neots Bypass in Cambridgeshire, for the Department of Transport, for £6.1m, and an extension to the sewage treatment works at Anwick, Lincolnshire, for Anglian Water at £1m. Other work includes the fitting out of warehouses in Bedford for Texas Instruments for £765,000, and housing improvements for the Greater London Council for £524,000.

*

J. WIMPENNY & CO, Huddersfield, has won five contracts totalling £2.2m. Largest is a £1m order from Plessey Properties for extensions to the production and engineering facilities at the Birkby Plastics Factory, Liversedge. Work on site has started for completion by September. At Silver Street Huddersfield, Wimpenny's will build nine factory and workshop units under a £300,000 contract for Kirklees Metropolitan Development Co. At Halifax, the construction division is to undertake further alterations and extensions at the Holdsworth House Hotel, for £250,000. Fire damage building at Perseverance Mill, Wibsey, is worth £280,000, and the concrete treatments division has a £380,000 contract from West Derbyshire District Council for structural repairs to 68 Airey houses at Matlock using the Shawcocrete system.

*

Ninety energy-saving houses are to be built for Bournville Village Trust by LOVELL CONSTRUCTION (MIDLAND) under a £2.1m design and build contract. The client is the St Laurence (BVT) Housing Association. Work has just started for completion in 58 weeks. The site is at Rowheath, Birmingham, on the estate of the Bournville Village Trust. It will consist of two- and three-bedroom units in three basic designs. The houses will initially be offered for purchase to tenants of Bournville Village Trust.

*

The Leicester Organisation for the Relief of Suffering (LOROS) has awarded JOHN LAING CONSTRUCTION a contract worth nearly £1m to build a 25-bed single-storey continuing care unit in the grounds of Groby Road Hospital, Leicester. The unit will be of load-bearing brick and structural cavity walls on concrete strip foundations, with a pitched roof of structural steel covered with concrete slates. Block internal partitions, finishes, services and external works are also included in the contract. Due for completion in the summer of 1985, it is hoped the hospice will be fully operational by the autumn.

FT UNIT TRUST INFORMATION SERVICE

AUTHORISED UNIT TRUSTS

Acc Units		88 4	+0 6	2 20
US Emerging Co's	45 8	48 7	+0 1	0 53
Worldwide Bond	147 0	156.4	-0 9	3 52
Equitas Prog.	136 6	146 1	-0 4	4 01
Aitken Hume				
1, Worship St., EC2			01-628 6626	
American Tech Fd	114 9	123 0	-1 1	0 10
Inc & Gwth Fd.	35 0	37 3	-0 6	4 81
Pacific Fd	147 0	156 6	-1 4	0 40
Secure Income Fd	127 6	136 1	-0 7	5 65
Special Sits	159 3	170 0	-2 3	0 97
Energy Fd	226 3	241 4	-0.4	0 60
Exempt Fd.	396 0	423 5		3 00
Small Co's Fd.	272 9	291 3	-2 0	1 70
Jap Technology	64 9	69 3	-0 7	0.20
Allied Unit Trusts Limited (A.) (G.)				
Allied Hambro Hse, Hutton, Brentwood, Essex Brentwood (0277) 211459 & 229123				
Balanced Trusts				
First Trust	138 1	146 4	-1 2	4 45
Growth & Income Tst.	89 7	95 1	-0 7	3 47
Capital Trust	163 5	173 3	-1.4	2.72
Balanced Trust	238 9	235 2	-1 2	3 50
Accum Trust	348 8	369.7	-3 0	3 25
Income Trusts				
High Income Trust	150 3	159 3	-0 8	5 30
Equity Income Trust	84 6	89 7	-0 4	5 47
High Yield Trust	104 8	111 1	-0 2	6 35
Govt Secs Trust	28 3	29.7	+0 1	4 12
International Trusts				
International Trust	58 5	62 0	-0 7	0 84
Japan Trust	62 5	66 3	-0 6	0 01
Pacific Trust	115 8	122 8	-1 0	0 39
Amer Spec Sits Trust	44 0	46 6	-0 3	0 97
Secs of America Trust	133 6	141 6	-1 2	1.48
Specialist Trusts				
Allied Asset Value	134 3	142 4	-0 8	4 00
Gilt Growth Trust	30 8	32 1		3 52
Smaller Co's Trust	89 2	94 6	-1 6	2 83
2nd Sir Co's Trust	119 1	126 2	-0 7	2 69
Recovery Trust	48 9	51.6	-0.4	3.15
Met Min & C'dty Trust	100 2	106 2	-0 9	1 69
Overseas Earnings Tst	127 0	134 6	-0 9	3 39
Technology Trust	84 2	89 2	-1 6	0 94
Exempt Trusts				
Income Exempt Trust	93 5	99 1	-0.3	5 84
Far East Exempt Trust	119 9	127 1	-1 1	0 72
Smaller Co Exempt Tst	146 9	155 7	-0 7	2.71
U.S.A. Exempt Trust	200 2	212 6	-2 8	1.53
Anderson Unit Trust Managers Ltd.				
62, London Wall, EC2R 7DQ			01-638 1200	
Anderson U.T.	115 8	123 8		2.17
Anthony Wieler Unit Tst. Mgmt. Ltd.				
19, Widegate St., London E1 7HP 01-377 1010				
Wieler Gwth Fd. Inc.	54 7	58 8		1 50
Do Accum.	73 6	79 1		3 98
Arbuthnot Securities Ltd. (a)(c)				
131, Finsbury Pavement, EC2A 1AY			01-628 9876	
Capital Growth	43 6	46 6	-0 4	2 32
(Accumulation)	46 0	49 1	-0 5	2 32
Commodity	98 0	104 8	-0 7	1 90
(Accumulation)	160 3	171 4	-1 2	1 90
(10% Withdrawal)	58 4	62 4	-0 4	1 90
Eastern & Internat'l	87 8	93 8	-1 0	1 00
(6% Withdrawal)	51 7	55.2	-0 6	1 00
Finance & Property	36 3	38 8	-0 3	3 26
Foreign Gwth	56 2	60 1	-0 4	1 00
Gilt & Fixed	46 5	48 9		9.58
(Accumulation)	65 6	69 0		9.58
High Income	50 6	54 1	-0.3	7 03
(Accumulation)	106 0	113 3	-0 7	7 03

Int. Leisure				
Inv. Tst. shares	98 3	105 0	-1 0	1 23
Prop Shares	34 4	36 7	-0 3	1 87
Univ. Energy	72 1	76 9	-0 5	1 03
World Tech	44 0	46.9	-0.4	—
Overseas Funds				
American Growth	63 6	67 8	-0 9	1 56
Am. Smaller Cos	18 9	20 2	-0 2	0 30
Am Spec. Sits.	60 0	64 0	-1 0	0 11
Australian Growth	71 6	76 4		1 64
Far East	42 5	45 3	-0 2	—
Hong Kg Perfmnce	19 9	21 2	-0 3	2 59
Intl. Growth (z)	107.2	114 3	-0 8	1 37
Japan Perf. Tst	39 7	42 3	-0 5	—
Japan Smlr Cos Tst	12.7	13 5	-0.1	—
General Funds				
Capital Acc.	128 9	137.5	-1 1	3 18
Comm & Ind.	95.4	101 8	-0 8	1 76
Domestic	81 8	87 3	-1.0	3 15
Growth	163 8	174 7	-1 3	1 72
Shield	85 4	91.1	-0 2	2 01
Exempt Funds				
Exempt	302 4	316.6	-2.3	4 19
Ex Mkt. Ldrs	55 7	58.3	-0.5	3 24
Brown Shipley & Co. Ltd. (a)(g)				
Harlands Hse, Haywards H'th, Sx. 0444-458144.				
B S. Fund	43 2	46 7	-0 4	4 21
B.S Accum	67 8	73 3	-0 6	4 21
Financial	80 4	86 0	-0 8	3 28
Growth Accum	142 0	153 5	-0 7	2 39
Growth Income	94.1	101.7	-0 5	2 39
High Income	39 6	42 4	-0 2	6.50
Income	45 7	49 2	-0 3	5.27
North American	42 1	45 7	-0 4	1.24
Orient	48 0	51 6	-0 1	0 22
Recovery	25 2	27 4	-0 2	3 43
Technology	146 6	158 5	-2 7	0.27
Exempt	145 5	156 4	-1 1	4 17
Buckmaster Management Co. Ltd. (a) (c)				
The Stock Exchange, EC2P 2JT			01-588 2868	
General Inc April 5	137 9	144 8		3 24
Accum Units April 5	206 3	216 6		3 24
Income Apr 4.	71 4	74.7		6 55
Accum Units Apr 4	111 1	116 3		6 55
International Apr 2	99 1	105 4		2 16
(Accum Uts) March 27	127 0	135 1		2 16
Smaller Co's April 6	852 1	908 6	-14 1	1.52
(Accum Uts) April 6	884 2	942.9	-14.6	1.52
Canada Life Unit Trust Mngrs. Ltd.				
2-6 High St., Potters Bar, Herts.			P. Bar 51122	
Can Gen Dist	78 7	82 8	-0 9	3 37
Do. Gen. Accum	117 0	123 2	-1.3	3.37
Do. Income Dist	55 3	58.3	-0.3	6.27
Do Inc. Accum.	101 2	106 5	-0 6	6 27
Gilt & Fxd. Int. Trust.	33 3	35.0		—
Cannon Fund Managers Ltd. (z)				
1, Olympic Way, Wembley, HA9 0NB.			01-902 8876	
Growth	184 0	195 7	+1 0	3 46
Income	207 3	220 5	+0 9	5 08
Far East	118 2	125.7	+0 8	0 92
North American	87 0	92.6	-1.2	2.10
Capel (James) Mngt. Ltd.				
100, Old Broad St., EC2N 1BQ.			01-588 6010	

Insurances—continued

Key Inv Fd	—	130.48	....	—
Pcmkr Inv Fd	—	130.1	....	—
Equity Fd	124.94	131.52	....	—
Fxd Int Fd	111.09	116.93	....	—
Propty Fd	105.09	110.62	....	—
Cash Fd	102.26	107.64	....	—
Managd Fd	125.48	132.09	....	—
Col Mut Life (Pension Annuities)				
ManCpA B	114.42	120.45	+6 02	—
ManInvA B	115 26	121.34	+6.14	—
Commercial Union Group				
St Helens, 1 Undershaft, EC3. 01-283 7500				
VarAnnAccUts	—	168 13	+0.14	—
VarAnnApr13	—	36.49	+0.07	—

Equity Acc	192.9	203.1	-1.0	—
Propty Acc	170.4	179.4	-0.2	—
Int Acc	152.9	161.0	+4.0	—
ManagedAcc	178.1	187.5	+1.0	—
Spec Sits	135.5	142.7	-0.3	—
PenIntAcc	149.0	156.9	+4.1	—
PenPrpAcc	190 3	200.4	+0.5	—
Pens Equity	230.1	242.3	+2.1	—
Pen My Acc	177.5	186.9	+2.1	—
Gilt Deposit. Index Fund prices available on request.				
Crown Life				
Crown Life House, Woking GU12 1XW. 046862-5033				

Pension Funds				
Cash Acc	102.6	108.0	....	—
Cash Cap	102.5	107.9	....	—
UK Eq Cap	112.6	118.6	-1.2	—
UK Eq Acc	116.1	122.3	-1.3	—
Fxd Int Cap	104.3	109 8	+0.1	—
Fxd Int Acc	107.6	113.3	+0.1	—
IndxLkdCap	89.3	94.1	+0.1	—
IndxLkdAcc	92.3	97.2	+0.3	—
Mixed Cap	106.5	112.2	-0.5	—
Mixed Acc	110.1	113.9	-0.5	—
O'seasFdCp	109 5	115.3	-0.3	—
O'seas Acc	113.0	119.0	-0.3	—
PropertyCap	96.0	101.1	....	—

PensLkdGtIn	94.2	99.1	+0.5	—
PensLkdAcc	96.2	101.2	+0.5	—
PensDepInt	147.5	148.8	....	—
PensDepAcc	155.1	163.3	....	—
Henderson Administration				
26 Finsbury Sq, London EC2. 01638 5757				
High Inc	166.2	175.0	-0.9	—
Gilt Edged	99.3	104.6	....	—
Cap Growth	161.7	170.3	-1.0	—
Technology	169.9	178.9	-1.1	—
Nat Res'ces	143.0	150.6	-0.6	—
Spec Sits	195.1	205.4	-0.5	—
N Amer	196.6	207.0	-1.5	—
Far East	216.2	227.6	-1.0	—
Property	118.4	124.7	....	—
Managed	194.8	205.1	-1.2	—
Deposit	119.6	125.9	....	—
Prime Res	120.4	126.8	....	—
Mgd Currncy	98.3	103.5	+0.1	—
Glb Hth Care	90.6	95.4	-0.6	—
Pension Funds				
UK Equity	117.1	123.3	-0.9	—
Fixed Int	117.3	123.5	....	—
Spec Sits	125.8	132.5	-0.5	—
N American	101.6	107.0	-1.0	—
Far East	150.1	158.1	-0.7	—
Prime Res	109.9	115.7	....	—
Comm Prp	104.6	110.2	....	—
Managed	119.6	125.9	-0.9	—
Deposit	104.6	110.2	....	—
Capital units prices available on request.				
Kinsman Assurance Society				
43 Charlotte Sq, Edinburgh. 031-225 6166				
Savngs Nrw	132.6	135.3	....	—
Life Assur	233.3	238.1	....	—
Savings Fd	220.0	224.5	....	—
Liberty Life Assurance Co Ltd				
Station Road, New Barnet. 01-440 8310				
Fund Managers, Touche Remnant & Co.				
Sel Sec A	24.3	26.5	....	—
Blue Chip	19.1	20.2	-0.3	—
Fixed Yield	19.0	20.1	+0.1	—
G'nteed Mny	15.2	16.0	....	—
International	18.4	19.4	-0.1	—
Managed	24.4	25.7	+0.1	—
Property	15.4	16.3	+0.1	—
Pacific	19.2	20.3	....	—
Equity	15.4	16.3	-0.2	—
Special Sits	22.8	24.0	-0.2	—
Int Cur	13.3	14.0	+0.1	—
IndxLkdSecs	10.6	11.1	+0.1	—
American	16.7	17.6	+0.2	—
London Life Association Co Ltd				
100 Temple Street, Bristol BS1 6EA. 0272-279179				
Linked Assurances				
Equity	268.8	—	....	—
Fixed Int	174.6	—	....	—
Property	180.4	—	....	—
Deposit	145.6	—	....	—
Mixed	213.3	—	....	—
Index Stk	108.1	—	....	—
Internationl	125.1	—	....	—
Managed Funds				
EquityInt(P)	200.5	—	....	—
Fixed Int(P)	183 6	—	....	—
Property(P)	131.4	—	....	—
Deposits(P)	126.6	—	....	—
Mixed(P)	172.5	—	....	—
Index Stk(P)	115.2	—	....	—
Interntnl(P)	121.9	—	....	—
Moneywise Friendly Society				
80 Holdenhurst Road, Bournemouth. 0202 295678				
Moneywise	54.0	57.8	....	—
Municipal Life Assurance Ltd				
99 Standing Rd. Maidstone. 0622 679351				
Equity Fd	106.5	112.5	....	—
Managed Fd	111.5	118 0	....	—
Premium Life Assurance Co Ltd				
Eastchester House, Haywards Heath. 0444 458721				
Nat Res'ces	105 0	111.0	....	—
Property	144.0	152.0	....	—
UK Equity	143.0	151.0	....	—
Intl Equity	131.0	138.0	....	—
Jarrats Fd	81 0	86 0	....	—
Prudential Pensions Ltd				
Holborn Bars. EC1 2NH. 01-405 9444				
Pre-Linked Retirement Plan				
Managed Fd	159.7	166.4	....	—
Cash Fd	117.6	122 5	....	—
Reliance Mutual				
Reliance Hse, Tunbridge Wells, Kent. 0892 22271				
BL Pension Funds				
Deposit Cap	95 9	101 0	+0.2	—
Deposit Acc	96.5	101.6	+0.2	—
Equity Cap	95.9	101.0	-2 5	—
Equity Acc	96.5	101.6	-2.4	—
Fixed Int Cap	99.4	104.7	-0.5	—

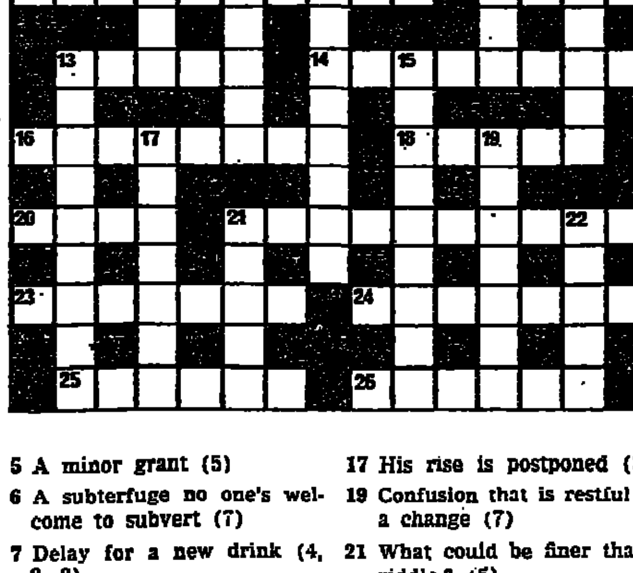
Offshore & Overseas—continued

INSURANCES

Money Market Trust Funds

Money Market Bank Accounts

F.T. CROSSWORD PUZZLE No. 5,388



ACROSS

1 It's experienced in poetic form (6)

4 Giving my leg a new treatment with spirit (6)

8 Cry from a whale (7)

9 Grim appearance of horse without carriage (7)

11 Decided to be resolute (10)

12 Press a curtain material (4)

13 Sailor turned to crime and is seen in the dock (5)

14 Before embracing Anne put out feelers (8)

16 Used to be in a job (8)

18 Strip a fire-arm ? (5)

20 He's a fantastic tennis player (4)

21 Describing one who was his own master ? (4-6)

23 Not precious stones, but may be worn (7)

24 The current recession (3-4)

25 Firemen will use it, though it may ruin the hose (6)

26 He holds listeners in a kind of transport (6)

DOWN

1 Sinuous slave dance (5)

2 Some card-games supplied by a stationer (7)

3 Offering no chance to gain some odd change ? (4, 5)

5 A minor grant (5)

6 A subterfuge no one's welcome to subvert (7)

7 Delay for a new drink (4, 2, 3)

10 Unexceptional combination of extremes (3, 3, 3)

13 One missile after another produces great surprise (4-5)

15 Record-holder (9)

17 His rise is postponed (3-4)

19 Confusion that is restful for a change (7)

21 What could be finer than a riddle ? (5)

22 Field division that takes years to train (5)

The solution to last Saturday's prize puzzle will be published with names of winners next Saturday.

هكذا من الأصل

هكذا من الاصل

INSURANCE & OVERSEAS MANAGED FUNDS

Vanbrugh Fund Mngmt. Intl. Ltd.
28-34 Hill St, St. Helier, Jersey 0534 36281

VCF Income (A & B)	132.6	132.9	+0.7	6.40
VCF Growth (C & D)	108.2	108.4	+0.6	—

S. G. Warburg & Co. Ltd. and Subsidiaries
30, Gresham Street, EC2 P2EB. 01-600 4555.

Energy Intl April 5		$44.29	-0.38	—
Merc Eurbd April 4	$15.89	16.05	-0.01	6.89
Select Risk Mar 20	$17.70	18.33	....	—

39-41 Broad St, St Helier, Jersey, CI. 0534 74715

Merc Comm Apr 3	£25.66	26.31	.....	0.84
Merc Far East April 4	£27.31	28.02	..	0.64
Merc Trans Mar 30	£22.73	23.31xd	..	2.10
Metals Tst April 5	£13.58	13.91	-0.44	3.02
Selected Mkt April 5	£18.56	19.04	-0.45	1.58

Mercury Money Market Trust Ltd.

D-Mark	DM77.13	+0.01	—
Dutch Guilder	DFl 103.45	...	—
Japanese Yen	Y7 759	+1	—
£ Sterling	£18.87	...	—
Swiss Franc	SF76.16		—
U.S.$	$31.73		—

1 Thomas St, Douglas, I.o.M. 0624 4856

Merc IoM Fund	56.1	59.7xd	-0.3	7.7
Merc Intl. Bond Fd.	38.2	40.7xd	-0.1	7.3

Wardley Investment Services Ltd.,
4th Floor, Hutchison House, Hong Kong

Wardley Trust	$5.70	6.25	..	1.20
Wardley Nikko As. Fd	$25.53	27.37	...	5.48
Wardley Bond Trust	$10.84	11.40	..	8.16
Wardley Japan Trust	$34.12	36.54	...	0.38
Wardley Prv Cap Tst	$9.99	10.49	.	0.76

WestAvon Secs (Guernsey) Ltd
Borough Hse, St Peter Port, Guernsey. 0481 27963

Gilt & Option Fd.	£1.18	1.23xd	...	2.50
US $ Option	$0.84	0.89	...	—

World Wide Growth Managementφ
10a, Boulevard Royal, Luxembourg

Worldwide Gth Fd	$12.67	-0.01	—

Inv. Adv.: M & G. Inv. Mngt., Ltd., London.

Wren Commodity Management Ltd.
10, St. George's St., Douglas IoM 0624 25015

Wren Com. Fund	22.2	23.1	.	—
Chinese Fund	62.2	64.8	......	—
Precious Metal Fund	141.5	147.1		—
Vanguard Cmdy Fd.	33.0	33.9	..	—
Financial Futures Fd.	65.6	68.3	..	—
Wren Intl Fnd.*	$0.703	0.732		—

NOTES

Prices are in pence unless otherwise indicated and those designated $ with no prefix refer to U.S. dollars. Yield % (shown in last column) allow for all buying expenses. a Offered prices include all expenses. b Today's prices. c Yield based on offer price. d Estimated. g Today's opening price. h Distribution free of UK taxes. p Periodic premium insurance plans. s Single premium insurance. x Offered price includes all expenses except agent's commission. y Offered price includes all expenses if bought through managers. Z Previous day's price. ¶ Guernsey gross. # Suspended. ♦ Yield before Jersey tax. † Ex-subdivision. ‡‡ Only available to charitable bodies. § Yield column shows annualised rate of NAV increase.

FT LONDON SHARE INFORMATION SERVICE

BRITISH FUNDS

"Shorts" (Lives up to Five Years)

Interest Due	Stock	Price £	Last xd	Yield Int.	Yield Red.
22N 22May	Exch 14pc 1984	100[illegible]	7.10	13.92	9.06
19D 19Jun	Exch. 3pc 1984	98[illegible]	14.11	3.04	8.70
26Mar 26S	Treas 12pc 1984	101¼	20.2	11.85	9.06
22Aug 22F	Treas. 15pc 1985	104⅝	16.1	14.34	9.26
22S 22Mar	Exch. 12pc Cnv. '85	102⅜	14.2	11.72	9.31
21N 21My	Treas 3pc 1985	94[illegible]	17.10	3.19	8.56
15Jan 15Jul	Treas 11½pc 1985	102¼	10.12	11.25	9.53
3Mar 3Se	Treas 8¾pc Cnv '85	98⅞	20.1	8.85	9.57
22May 22N	Exch. 12¼pc 1985	103⅝	17.10	11.82	9.73
25Aug 25Fb	Exch. 11¾pc '86	103¼	19.1	11.38	9.73
11Ap 11Oc	Treas. 10pc Cnv 1986	101[illegible]	5.3	9.89	9.41
19N 19May	Treas 3pc 1986	88[illegible]	11.10	3.37	8.86
19Nv 19My	Exch. 10½pc Cv '86	101[illegible]	13.10	10.39	9.92
12Dec 12Jun	Treas 12pc 1986	103⅝	7.11	11.58	10.07
10Ja 10Jul	Treas 8½pc 1984-86‡‡	97⅜	5.12	8.73	9.81
29Ap 29Oc	Exch. 14pc 1986	108[illegible]	23.3	12.88	10.07
21May 21N	Exch. 2½pc 1986	85⅛	18.1	2.93	8.87
22Jul 22Jan	Exch. 13¼pc 1987	107¼	6.12	12.35	10.15
10Fb 10Aug	Treas 10¼% Cv '87	100⅜	4.1	10.21	10.06
24Fb 24Ag	Exch 2½pc 1987	83[illegible]	18.1	2.98	8.44
6Oct 6Apr	Exch. 10½pc 1987	100⅝	1.3	10.43	10.25
1N 1May	Funding 6½pc '85-87‡‡	91¼	26.3	7.12	9.89
12Jun 12Dec	Treas. 10pc 1987	99¼	1.3	10.08	10.25
14Jan 14Jly	Treas 3pc 1987	82[illegible]	8.12	3.62	9.21
3May 3Nov	Treas. 12pc 1987	104[illegible]	27.3	11.45	10.35
26Jul 26Ja	Treas 7¾pc 1985-88‡‡	93¼	20.12	8.31	9.90
10My 10Nv	Exch 10½pc '88	100½	4.10	10.45	10.36
14Jun 14Dec	Treas 9¾pc Cv '88	98[illegible]	—	9.95	10.30
1Jan 1Jul	Transport 3pc '78-88	79[illegible]	5.11	3.77	8.92
25Ap 25Oc	Treas. 9½pc '88	96[illegible]	19.3	9.82	10.40
22Aug 22Fb	Treas 11½pc 1989	103[illegible]	10.1	11.05	10.46

Five to Fifteen Years

Interest Due	Stock	Price £	Last xd	Yield Int.	Yield Red.
14Dec 14Jun	Treas. 10½pc 1989	103	7.11	10.54	10.57
1Feb 1Aug	Exch. 10pc 1989	100	—	10.31	10.74
Aug Feb	Do. 10pc 89A (£40pd)	39[illegible]	—	10.28	10.67
15Ap 15Oct	Treas 5pc 1986-89	81¼	9.3	6.15	9.41
15Jly 15Ja	Treas 13pc 1990‡‡	112[illegible]	9.12	11.92	10.81
22Se 22Mar	Exch. 12½pc 1990	108	14.2	11.64	10.78
15D 15Jun	Treas 8¼pc 1987-90‡‡	92¾	8.11	9.15	10.44
25Ap 25Oc	Treas. 10pc Cv 1990	98[illegible]	—	10.27	10.55
10Jul 10Ja	Treas 11¾pc 1991	106⅜	5.12	11.31	10.91
5Oct 5Apr	Funding 5¾pc '87-91‡‡	79¾	1.3	7.22	9.84
25Ap 25Oc	Exch. 11pc 1991	100⅞	19.3	10.85	10.74
22Jly 22Jan	Treas 12¾pc 1992‡‡	112¾	16.12	11.63	10.86
21Ag 21Fb	Treas 10pc 1992	98⅝	16.1	10.28	10.50
[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Over Fifteen Years

[illegible]

Undated

[illegible]

Index-Linked

[illegible]

INT. BANK AND O'SEAS GOVT STERLING ISSUES

[illegible]

CORPORATION LOANS

[illegible]

COMMONWEALTH AND AFRICAN LOANS

[illegible]

LOANS

Building Societies

[illegible]

Public Board and Ind.

[illegible]

Financial

[illegible]

FOREIGN BONDS & RAILS

[illegible]

AMERICANS

[illegible]

CANADIANS

[illegible]

BANKS, H.P. AND LEASING

[illegible]

Hire Purchase, Leasing, etc.

[illegible]

BEERS, WINES AND SPIRITS

[illegible]

BUILDING INDUSTRY, TIMBER AND ROADS

[illegible]

CHEMICALS, PLASTICS

[illegible]

DRAPERY AND STORES

[illegible]

DRAPERY & STORES—Cont.

[illegible]

ELECTRICALS

[illegible]

ENGINEERING

[illegible]

ENGINEERING—Continued

[illegible]

FOOD, GROCERIES, ETC

[illegible]

HOTELS AND CATERERS

[illegible]

HOTELS—Continued

[illegible]

INDUSTRIALS (Miscel.)

[illegible]

حكلة امن أفضل

هكذا من الأصل

INDUSTRIALS—Continued

[illegible]

INSURANCES

[illegible]

LEISURE

[illegible]

LEISURE—Continued

[illegible]

MOTORS, AIRCRAFT TRADES

Motors and Cycles

[illegible]

Commercial Vehicles

[illegible]

Components

[illegible]

Garages and Distributors

[illegible]

NEWSPAPERS, PUBLISHERS

[illegible]

PAPER, PRINTING ADVERTISING

[illegible]

PROPERTY

[illegible]

PROPERTY—Continued

[illegible]

SHIPPING

[illegible]

SHOES AND LEATHER

[illegible]

SOUTH AFRICANS

[illegible]

TEXTILES

[illegible]

TOBACCOS

[illegible]

TRUSTS, FINANCE, LAND

Investment Trusts

[illegible]

INVESTMENT TRUSTS—Cont.

[illegible]

Finance, Land, etc

[illegible]

OIL AND GAS

[illegible]

OIL AND GAS—Continued

[illegible]

OVERSEAS TRADERS

[illegible]

PLANTATIONS

Rubbers, Palm Oil

[illegible]

Teas

[illegible]

MINES

Central Rand

[illegible]

Eastern Rand

[illegible]

Far West Rand

[illegible]

O.F.S.

[illegible]

Finance

[illegible]

Diamond and Platinum

[illegible]

Central African

[illegible]

MINES—Continued

Australians

[illegible]

Tins

[illegible]

Miscellaneous

[illegible]

NOTES

Unless otherwise indicated, prices and net dividends are in pence and denominations are 25p. Estimated price/earnings ratios and covers are based on latest annual reports and accounts and, where possible, are updated on half-yearly figures. P/Es are calculated on "net" distribution basis, earnings per share being computed on profit after taxation and unrelieved ACT where applicable; bracketed figures indicate 10 per cent or more difference if calculated on "nil" distribution. Covers are based on "maximum" distribution; this compares gross dividend costs to profit after taxation, excluding exceptional profits/losses but including estimated extent of offsettable ACT. Yields are based on middle prices, are gross, adjusted to ACT of 30 per cent and allow for value of declared distribution and rights.

- ● "Tap Stock".
- * Highs and Lows marked thus have been adjusted to allow for rights issues for cash.
- † Interim since increased or resumed.
- ‡ Interim since reduced, passed or deferred.
- ‡‡ Tax-free to non-residents on application.
- ф Figures or report awaited.
- ♥ Not officially UK listed; dealings permitted under Rule 163(4)(a).
- ☆ USM; not listed on Stock Exchange and company not subjected to same degree of regulation as listed securities.
- ‡‡ Dealt in under Rule 163(3).
- ¢ Price at time of suspension.
- ¶ Indicated dividend after pending scrip and/or rights issue: cover relates to previous dividend or forecast.
- ◆ Merger bid or reorganisation in progress.
- ♣ Not comparable.
- ♠ Same interim: reduced final and/or reduced earnings indicated.
- § Forecast dividend; cover on earnings updated by latest interim statement.
- ‡ Cover allows for conversion of shares not now ranking for dividends or ranking only for restricted dividend.
- ★ Cover does not allow for shares which may also rank for dividend at a future date. No P/E ratio usually provided.
- ¤ No par value.

B.Fr. Belgian Francs. Fr. French Francs. §§ Yield based on assumption Treasury Bill Rate stays unchanged until maturity of stock. a Tax free. b Figures based on prospectus or other offer estimate. c Cents. d Dividend rate paid or payable on part of capital, cover based on dividend on full capital. e Redemption yield. f Flat yield. g Assumed dividend and yield. h Assumed dividend and yield after scrip issue. j Payment from capital sources. k Kenya. m Interim higher than previous total. n Rights issue pending. q Earnings based on preliminary figures. s Dividend and yield exclude a special payment. t Indicated dividend: cover relates to previous dividend, P/E ratio based on latest annual earnings. u Forecast dividend: cover based on previous year's earnings. v Subject to local tax. x Dividend cover in excess of 100 times. y Dividend and yield based on merger terms. z Dividend and yield include a special payment: Cover does not apply to special payment. A Net dividend and yield. B Preference dividend passed or deferred. C Canadian. E Minimum tender price. F Dividend and yield based on prospectus or other official estimates for 1983-84. G Assumed dividend and yield after pending scrip and/or rights issue. H Dividend and yield based on prospectus or other official estimates for 1984. K Figures based on prospectus or official estimates for 1984. M Dividend and yield based on prospectus or other official estimates for 1983. N Dividend and yield based on prospectus or other official estimates for 1985. P Figures based on prospectus or other official estimates for 1983. Q Gross. T Figures assumed. Z Dividend total to date.

Abbreviations: xd ex dividend; xc ex scrip issue; xr ex rights; xa ex all; xd ex capital distribution.

REGIONAL AND IRISH STOCKS

The following is a selection of Regional and Irish stocks, the latter being quoted in Irish currency.

			Fin. 13% 97/02..	£92½	......
Albany Inv 20p	80	+4	Alliance Gas	70	......
Craig & Rose £1	900	......	Arnott	235	......
Finlay Pkg. 5p	55	+2	CPI Hldgs.	81	−1
Higsons Brew	103	......	Carrol Inds.	116	−1
Holt (Jos) 25p	870	......	Hall (R. & H.)	67	......
IoM Stm. £1	150	......	Heiton Hldgs.	17	......
			Irish Ropes	53	......
IRISH			Jacob (W & R.)	65	......
Exch. 12% 1985	£98¾	......	TMG	50	......
Nat. 9¾% 84/89	£88	......	Unidare	70	......

OPTIONS

3-month call rates

Industrials					
Allied-Lyons	15	Hawker Sidd	38	Vickers	14
BOC Grp	27	Hse of Fraser	26	Woolworth Hldg.	50
BSR	26	ICI	42		
Babcock	17	'Imps'	12	**Property**	
Barclays Bank	45	ICL	7½	Brit Land	11
Beecham	32	Ladbroke	23	Cap Counties	16
Blue Circle	48	Legal & Gen	45	Land Secs	25
Boots	16	Lex Service	40	MEPC	25
Bowaters	25	Lloyds Bank	50	Peachey	17
Brit Aerospace	28	'Lots'	3	Samuel Props.	12
BAT	15	Lucas Inds	18	Sterling Guar.	4
Brown (J.)	3	'Mams'	14		
Burton Ord.	22	Marks & Spcr	20	**Oils**	
Cadburys	11	Midland Bk	36	Brit. Oil & Min.	9
Comm Union	16p	NEI	10	Brit Petroleum	35
Courtaulds	11	Nat West Bk	60	Burmah Oil	17
Debenhams	14	P & O Dfd	25	Charterhall	9
Distillers	22	Plessey	20	Premier	6
Dunlop	5	Racal Elect	18	Shell	55
FNFC	6½	RHM	8	Tricentrol	20
Gen Accident	42	Rank Org Ord	24	Ultramar	60
Gen Electric	16	Reed Intnl	40		
Glaxo	70	Sears	8	**Mines**	
Grand Met	30	TI	22	Charter Cons.	24
GUS 'A'	55	Tesco	16	Cons Gold	58
Guardian	50	Thorn EMI	55	Lonrho	12
GKN	20	Trust Houses	18	Rio T Zinc	60
Hanson Tst.	17p	Turner Newall	10		
		Unilever	75		

A selection of Options traded is given on the London Stock Exchange Report page.

"Recent Issues" and "Rights" Page 22

This service is available to every Company dealt in on Stock Exchanges throughout the United Kingdom for a fee of £700 per annum for each security.

CURRENCIES, MONEY and CAPITAL MARKETS

FOREIGN EXCHANGES

Interest rates support dollar

BY COLIN MILLHAM

The firmness of U.S. interest rates supported the dollar on the foreign exchanges last week, although dealers in Europe and the U.S. were somewhat at odds over the implications of high interest rates for the U.S. currency.

Apart from the interest rate factor there was little else to stimulate the market during a fairly quiet week. Economic statistics were much as expected, with weekly U.S. M1 money supply rising by $2.2bn, and March unemployment remaining in line with the February rate of 7.8 per cent. This underlined the strong growth in the U.S. economy recently, since it compares with figures of 8 per cent in January and 8.2 per cent in December.

It was also regarded as a possible sign the Federal Reserve would further tighten its monetary stance by raising the discount rate. Thursday's increase in bank prime lending rates was also seen as a possible herald of a rise in the discount rate, although only a week ago any thoughts on this score had virtually ended, following the failure of the last Federal Open Market Committee meeting to make any move.

It is something of a moot point as to how much mileage the dollar can gain out of the rising trend in U.S. interest rates however, and there were signs on Friday that the currency may find it hard to consolidate the gains of last week. A level of DM 2.63 is regarded as an important chart resistance level, and after the prime rate news New York dealers pushed the dollar well above this level, but there was no follow through in the Far East, and Europe soon pulled it back below DM 2.63 amid talk of the underlying fundamental importance of the very large U.S. current account deficit, highlighted by the president of the German Bundesbank in a speech on Thursday.

Sterling appeared to be vulnerable last week, and on a trade-weighted basis touched a 13-month low, largely as a result of nervousness about the miners' strike. The growing differential between UK and U.S. interest rates also seemed a depressing factor, but dealers suggested that London rates remain quite attractive when compared with most other major centres, given the relatively good performance of the British economy of late. The pound's decline against the dollar was therefore not reflected in similar falls against other currencies and sterling closed the week roughly unchanged against the D-mark.

£ in New York

	April 6	Prev. close
Spot †	$1.4300-4310	$1.4165-4170
1 month	0.26-0.28 dis	0.26-0.28 dis
3 months	0.73-0.75 dis	0.75-0.78 dis
12 months	3.20-3.28 dis	3.28-3.32 dis

£ forward rates are quoted in U.S. cents discount.

FORWARD RATES AGAINST STERLING

	Spot	1 month	3 month	6 month	12 month
Dollar	1.4295	1.4311	1.4361	1.4433	1.4608
D-Mark	3.7475	3.7395	3.7189	3.6905	3.6458
French Franc	11.5260	11.5657	11.6651	11.8329	12.1792
Swiss Franc	3.1100	3.0967	3.0694	3.0300	2.9631
Japanese Yen	322.0	321.4	319.9	317.7	313.5

BANK OF ENGLAND TREASURY BILL TENDER

	April 6	March 30		April 6	March 30
Bills on offer	£100m	£100m	Top Accepted rate of discount	8.3830%	8.3830%
Total of applications	£521.865m	£555.25m	Average rate of discount	8.3820%	8.3820%
Total allocated	£100m	£100m	Average yield	8.56%	8.56%
Minimum accepted bid	£97.91	£97.91	Amount on offer at next tender	£100m	£100m
Allotment at minimum level	25%	18%			

EMS EUROPEAN CURRENCY UNIT RATES

	ECU central rates	Currency amounts against ECU April 6	% change from central rate	% change adjusted for divergence	Divergence limit %
Belgian Franc	44.9008	45.6056	+1.57	+1.49	±1.5447
Danish Krone	8.14104	8.18839	+0.58	+0.50	±1.5425
German D-Mark	2.24184	2.23108	−0.48	−0.56	±1.0642
French Franc	6.87456	6.86459	−0.15	−0.23	±1.4052
Dutch Guilder	2.52595	2.51654	−0.37	−0.45	±1.4964
Irish Punt	0.72569	0.729109	+0.47	+0.39	±1.6699
Italian Lira	1403.49	2380.00	−1.67	−1.67	±4.1505

Changes are for ECU, therefore positive change denotes a weak currency. Adjustment calculated by Financial Times.

THE POUND SPOT AND FORWARD

April 6	Day's spread	Close	One month	% p.a.	Three months	% p.a.
U.S.	1.4185-1.4310	1.4280-1.4290	0.23-0.28c dis	−2.14	0.73-0.78dis	−2.11
Canada	1.8210-1.8320	1.8275-1.8285	0.24-0.34c dis	−1.90	0.80-0.90dis	−1.86
Nethlnd.	4.20½-4.23½	4.22¼-4.23¼	1⅛-⅞c pm	2.48	3-2½ pm	2.60
Belgium	76.15-76.75	76.40-76.50	16-26c dis	−3.30	55-65 dis	−3.14
Denmark	13.70-13.76	13.74½-13.75½	1.35-2.35ore dis	−1.61	4.80-5.90dis	−1.56
Ireland	1.2190-1.2270	1.2230-1.2240	0.36-0.44p dis	3.92	1.13-1.26dis	−3.91
W. Ger.	3.73-3.75½	3.74½-3.75½	1⅛-⅞pf pm	3.20	3½-2½ pm	3.07
Portugal	188.50-191.50	190.50-191.00	140-380c dis	−15.73	490-1100ds	−16.67
Spain	213.75-215.00	214.65-214.85	110-130c dis	−6.70	400-435 dis	−7.78
Italy	2308-2321	2317½-2319½	13½-15½lire dis	−7.50	42-44 dis	−7.42
Norway	10.73-10.81	10.80-10.81	4⅛-4⅞ore dis	−5.07	11⅛-12½ dis	−4.49
France	11.48-11.53	11.52-11.53	3½-4½c dis	−4.16	13-15 dis	−4.86
Sweden	11.09-11.14	11.11½-11.12½	1⅛-1⅞ore dis	−1.69	4½-5 dis	−1.71
Japan	320-323	321½-322½	0.66-0.58y pm	2.31	2.09-1.98 pm	2.53
Austria	26.20-26.40	26.30-26.35	6⅛-4½gro pm	2.42	18⅛-14½ pm	2.49
Switz.	3.09-3.12	3.10½-3.11½	1½-1c pm	4.82	4⅛-3⅞ pm	5.14

Belgian rate is for convertible francs. Financial franc 79.70-79.80. Six-month forward dollar 1.45-1.50c dis. 12-month .18-3.28c dis.

OTHER CURRENCIES

Apr. 6	£	$		£ Note Rates
Argentina Peso	47.79-47.87	33.55-33.58	Austria	26.20-26.50
Australia Dollar	1.5495-1.5515	1.0850-1.0865	Belgium	78.80-79.60
Brazil Cruzeiro	1,920.2-1,931.8	1,348-1,355	Denmark	13.67-13.81
Finland Markka	8.0085-8.0455	5.6200-5.6300	France	11.46-11.57
Greek Drachma	[illegible]	[illegible]	Germany	[illegible]
Hong Kong Dollar	[illegible]	[illegible]	Italy	[illegible]
Iran Rial	[illegible]	[illegible]	Japan	[illegible]
Kuwait Dinar (KD)	[illegible]	[illegible]	Netherlands	[illegible]
Luxembourg Fr.	[illegible]	[illegible]	Norway	[illegible]
Malaysia Dollar	[illegible]	[illegible]	Portugal	[illegible]
New Zealand Dlr.	[illegible]	[illegible]	Spain	[illegible]
Saudi Arab. Riyal	[illegible]	[illegible]	Sweden	[illegible]
Singapore Dollar	[illegible]	[illegible]	Switzerland	[illegible]
Sth African Rand	[illegible]	[illegible]	United States	[illegible]
U.A.E. Dirham	[illegible]	[illegible]	Yugoslavia	[illegible]

THE DOLLAR SPOT AND FORWARD

April 6	Day's spread	Close	One month	% p.a.	Three months	% p.a.
UK†	1.4185-1.4310	1.4280-1.4290	0.23-0.28c dis	−2.14	0.73-0.78dis	−2.11
Ireland†	1.1620-1.1695	1.1660-1.1670	0.18-0.14c pm	1.65	0.57-0.49 pm	1.82
Canada	1.2800-1.2820	1.2800-1.2805	0.06-0.04c pm	0.47	0.09-0.07 pm	0.25
Nethlnd.	2.9510-2.9700	2.9570-2.9590	1.16-1.11c pm	4.61	3.47-3.42 pm	4.66
Belgium	53.50-53.80	53.51-53.53	2-3½c dis	−0.61	9-11 dis	−0.74
Denmark	9.6000-9.6625	9.6250-9.6300	½-¼ore pm	0.62	1½-1 pm	0.52
W. Ger.	2.6145-2.6360	2.6215-2.6225	1.16-1.11pf pm	5.20	3.38-3.33 pm	5.12
Portugal	133.00-134.00	133.35-133.85	75-225c dis	−13.91	275-700dis	−14.58
Spain	150.15-150.60	150.25-150.35	50-60c dis	−4.38	200-220 dis	−5.58
Italy	1622-1630	1623-1624	7¼-7¾lire dis	−5.53	21½-22½ dis	−5.41
Norway	7.5550-7.5825	7.5625-7.5675	1.55-1.85ore dis	−2.69	4.20-4.50dis	−2.30
France	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Sweden	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japan	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Austria	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Switz.	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Belgian rate is for convertible francs. Financial franc [illegible]. † UK and Ireland are quoted in U.S. currency. Forward premiums and discounts apply to the U.S. dollar and not to the individual currency.

CURRENCY MOVEMENTS

April 6	Bank of England Index	Morgan Guaranty Changes %
Sterling	79.8	−11.1
U.S. dollar	127.2	+16.2
Canadian dollar	88.5	−3.5
Austrian schilling	117.6	+5.9
Belgian franc	90.6	−11.0
Danish kroner	79.4	−6.9
Deutsche mark	127.3	+9.0
Swiss franc	148.2	+11.4
Guilder	116.2	+5.0
French franc	67.1	−14.7
Lira	48.9	−18.5
Yen	159.5	+15.5

Morgan Guaranty changes: average 1980-1982=100. Bank of England Index (base average 1975=100).

CURRENCY RATES

April 6	Bank rate %	Special Drawing Rights	European Currency Unit
Sterling	—	0.743392	0.586025
U.S. $	9	1.05907	0.836515
Canadian $	10.81	[illegible]	1.06787
Austria Sch.	4	19.0965	15.0554
Belgian Fr.	11	56.8931	45.6057
Danish Kr.	7	10.2141	8.18839
D'mark	4	2.78262	2.23108
Guilder	5	3.13534	2.51654
French Fr.	9½	8.56485	6.86459
Lira	16	1725.83	1380.00
Yen	5	233.659	187.296
Norway Kr.	8	8.01567	6.42962
Spanish Pta.	—	159.166	127.604
Swedish Kr.	8½	8.25718	6.63315
Swiss Fr.	4	2.25606	1.80843
Greek Drch.	20½	110.285	88.3947

*CS/SDR rate for April 5: 1.35764.

FINANCIAL FUTURES

LONDON

THREE-MONTH EURODOLLAR $1m points of 100%; THREE-MONTH STERLING DEPOSIT £250,000 points of 100%; 20-YEAR 12% NOTIONAL GILT £50,000 32nds of 100%; STERLING £25,000 $ per £; DEUTSCHE MARKS DM 125,000 $ per DM; SWISS FRANCS SwFr 125,000 $ per SwFr; JAPANESE YEN Y12.5m $ per Y100 — [tables illegible]

CHICAGO

U.S. TREASURY BONDS (CBT) 8% $100,000 32nds of 100%; U.S. TREASURY BILLS (IMM) $1m points of 100%; CERT. DEPOSIT (IMM) $1m points of 100%; THREE-MONTH EURODOLLAR (IMM) $1m points of 100%; STERLING (IMM) Se per £; GNMA (CBT) 8% $100,000 32nds of 100% — [tables illegible]

WEEKLY CHANGE IN WORLD INTEREST RATES

LONDON	Apr. 6	change	NEW YORK	Apr. 6	change
Base rates	[illegible]	[illegible]	Prime rates	[illegible]	[illegible]
7 day interbank	[illegible]	[illegible]	Federal funds	[illegible]	[illegible]
3 Mth. Interbank	[illegible]	[illegible]	3 Mth. Treasury Bills	[illegible]	[illegible]
Treasury Bill Tender	[illegible]	[illegible]	6 Mth. Treasury Bills	[illegible]	[illegible]
Band 1 Bills	[illegible]	[illegible]	3 Mth. C D	[illegible]	[illegible]

Band 1 bills mature in up to 14 days, band 2 bills 15 to 33 days, and band 3 bills 34 to 63 days. Rates quoted represent Bank of England buying or selling rates with the money market. In other centres rates are generally deposit rates in the domestic money market and their respective changes during the week. Band 4 bills 8¾.

EXCHANGE CROSS RATES

Apr. 6	Pound St'rling	U.S. Dollar	Deutsche m'k	Japanese Yen	French Franc	Swiss Franc	Dutch Guild	Italian Lira	Canada Dollar	Belgian Franc
Pound Sterling	1.	1.429	3.748	322.0	11.525	3.110	4.228	2319.	1.828	76.45
U.S. Dollar	0.700	1.	2.623	225.3	8.070	2.176	2.958	1624.	1.280	53.52
Deutschemark	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Japanese Yen 1,000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
French Franc 10	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Swiss Franc	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Dutch Guilder	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Italian Lira 1,000	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Canadian Dollar	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Belgian Franc 100	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

EURO-CURRENCY INTEREST RATES (Market closing rates)

Apr. 6	Sterling	U.S. Dollar	Canadian Dollar	Dutch Guilder	Swiss Franc	D-mark	French Franc	Italian Lira	Belgian Franc Conv.	Belgian Franc Fin.	Yen	Danish Kroner
Short term	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7 days' notice	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Month	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Three months	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Six months	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
One year	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

Asian $ (closing rates in Singapore): Short-term 10⅜-10½ per cent; seven days 10⅜-10½ per cent; one month 10⅝-10¾ per cent; three months 10⅞-10¾ per cent; six-months 10⅞-11 per cent; one year 11⅞-11¼ per cent. Long-term Eurodollars two years 12¼-12⅝ per cent; three years 12¼-12⅝ per cent; four years 12½-12⅞ per cent; five years 12¾-13 per cent nominal closing rates. Short-term rates are call for U.S. banks and Japanese yen; two days' notice.

MONEY MARKETS

Nervousness, but no panic

A degree of nervousness was evident on the London money market last week. There was no sign of panic, but the mood was illustrated by a widening of the yield curve, as demand increased for short term market instruments, while interest rates on longer term money and paper rose. Day-to-day credit shortages were high, running in the region of £600m a day, and on each day the Bank of England offered early assistance. Conditions where somewhat distorted by the end of the financial year considerations for two of the largest discount houses. The houses like to run large books at such times, but the general trend in the market was to sell as many three-month (band 4) bills to the authorities as possible.

This has the benefit of not rolling forward shortages through repurchase agreements, as was so often the case last month. The unwinding of these agreements was the major factor between London and New York interest rates caused considerable concern in the market and resulted in the Bank of England being offered many times the amount of bills necessary to take out the daily shortages, but a reasonably calm tone was maintained by the obvious willingness of the authorities to absorb the required amount of bills as early as possible.

Sterling's fall to a 13-month low on a trade-weighted basis also tended to concentrate minds on the steady rise in U.S. interest rates, in contrast to the recent cut in UK banks' base rates, while the possible implications of the miners' strike added to the bearish mood.

The rise of ½ per cent to 12 per cent in U.S. banks' prime lending rates came as little surprise, given the upward move in the cost of New York money market funds. There was substantial pressure on the Federal funds overnight rate, partly because of end of quarter factors, and the Federal Reserve failed to give enough help to bring the rate much below 10½ per cent. This led to speculation the last Federal Open Market Committee meeting had reaffirmed the earlier temporary decision to allow Federal funds to trade above the previous target level of 10 per cent.

UK clearing banks' base lending rate 8¾-8½ per cent (since March 15 and 16)

MONEY RATES

Apr. 6	Frankfurt	Paris	Zurich	Amst'dam	Tokyo	Milan	Brussels	Dublin
Overnight	5.60-5.65	12⅛	1½-2½	5⅞-6⅛	6.21875	16⅞-17¼	—	11¾-12
One month	5.6-5.7	12⅜-12½	3⅛-3½	6⅛-6¼	6.21875	16⅞-17¼	11.7	12⅜-12⅝
Two months	5.65-5.80	12 1/16-12 3/16	—	—	—	—	11¾-12	12⅝-12⅞
Three months	5.75-5.90	12⅛-12⅜	3⅝-3⅞	6⅛-6¼	6.28125	17⅛-17⅜	11¾-12	12⅞-13⅛
Six months	5.85-6.00	12 11/16-12 13/16	—	6¼-6⅜	—	—	11¾-12	13-13¼
Lombard	5.5	—	—	—	—	—	—	—
Intervention	—	12	—	5⅞	—	—	—	—

LONDON MONEY RATES

Discount Houses Deposit and Bill Rates

Apr. 6 1984	Sterling Certificate of deposit	Interbank	Local Authority deposits	Company Deposits	Market Deposits	Treasury (Buy)	Treasury (Sell)	Eligible Bank (Buy)	Eligible Bank (Sell)	Fine Trade (Buy)
Overnight	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
2 days notice	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
7 days notice	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
One month	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Two months	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Three months	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Six months	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
Nine months	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
One year	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]

FT LONDON INTERBANK FIXING

LONDON INTERBANK FIXING (11.00 a.m. April 6)

3 months U.S. dollars	
bid 10 7/8	offer 11

6 months U.S. dollars	
bid 11 1/8	offer 11 1/4

The fixing rates are the arithmetic means, rounded to the nearest one-sixteenth, of the bid and offered rates for $10m quoted by the market to five reference banks at 11 a.m. each working day. The banks are National Westminster Bank, Bank of Tokyo, Deutsche Bank, Banque Nationale de Paris and Morgan Guaranty Trust.

ECGD Fixed Rate Export Finance Scheme IV. Average Rate for interest period March 7 to April 3 1984 (inclusive): 8.978 per cent. Local authorities and finance houses seven days' notice, others seven days' fixed. Finance Houses Base Rate (published by the Finance Houses Association) 9½ per cent from April 1, 1984. London and Scottish Clearing Bank Rates for lending 8¾-8½ per cent. London Deposit Rate for sums at seven days' notice 5¾-6 per cent. Treasury Bills: Average tender rates of discount 8.3820 per cent. Certificates of Tax Deposit (Series 6). Deposit of £100,000 and over held under one month 9 per cent; one-three months 9 per cent; three-six months 9½ per cent; six-nine months 9½ per cent; nine-12 months 9½ per cent. Under £100,000 8¾ per cent from April 6. Deposits held under Series 4-5 9¾ per cent. The rate for all deposits withdrawn for cash 7 per cent.

MONEY RATES

NEW YORK (4 pm)

Prime rate	12
Broken loan rate	[illegible]
Fed funds	[illegible]
Fed funds at intervention	[illegible]
Treasury Bills	
One month	[illegible]
Two month	[illegible]
Three month	[illegible]
Six month	[illegible]
One year	[illegible]
Treasury Bonds	
Two year	[illegible]
Three year	[illegible]
Four year	[illegible]
Five year	[illegible]
Seven year	[illegible]
10 year	[illegible]
30 year	[illegible]

Trade Development Bank Holding S.A.
Luxembourg

NOTICE IS HEREBY GIVEN that the Annual General Meeting of Shareholders of Trade Development Bank Holding S.A. (TDB Holding) will be held at the registered office of the Company, 13, Boulevard de la Foire, Luxembourg at 2:30 p.m. on 8th May, 1984 for the purpose of considering and voting on the following matters:

1. Approval of the Chairman's Statement.
2. Approval of the Statutory Auditors' report and the unconsolidated financial statements of the Company for the year ended 31st December, 1983.
3. Discharge of the Directors and of the Statutory Auditors concerning their duties relative to the year ended 31st December, 1983.
4. Distribution of a dividend of US$ 0.75 per share and the carrying forward of the balance of the profit.
5. Election of the Board of Directors for 1984. Standing for election: Messrs. Edmond J. Safra, François Lugeon, George B. Balamut, Jean Hoss, Roger Junod, C. G. Rodney Leach, John A. Waage and Walter H. Weiner.
6. Election of the Statutory Auditors for 1984.
7. Approval of the consolidated financial statements of the Company for the year ended 31st December, 1983.
8. Amendment of the corporate name, and consequential amendment of Article One of the Articles of Incorporation.

By Order of the Board,
Edmond J. Safra
Chairman

NOTES:

Subject to the relevant resolution being approved, the dividend will be payable on 1st June, 1984: (i) in respect of registered shares to shareholders on the register as at 1st May, 1984 and (ii) in respect of bearer shares against surrender of Coupon No. 15 to any of the Paying Agents listed below.

Any shareholder whose shares are in bearer form and who wishes to attend the Annual General Meeting in person must produce a depositary receipt or present his share certificates to gain admission. If he wishes to be represented at the meeting, he must lodge a proxy duly completed together with a depositary receipt at the registered office of TDB Holding at 13, Boulevard de la Foire, Luxembourg, not later than 7th May, 1984 at 5:00 p.m. The shareholder may obtain the depositary receipt and, if required, the form of proxy from any of the banks listed below by lodging his share certificates at their office or by arranging for the bank by whom his certificates are held to notify any of the banks listed that shares are so held.

Any shareholder whose shares are registered will receive a notice of the Annual General Meeting at his address on the register together with a form of proxy for use at the meeting. The proxy should be lodged at TDB Holding's office in accordance with the above instructions.

The remittance of the form of proxy will not preclude a shareholder from attending in person and voting at the meeting if he so desires.

The resolutions concerning Items 1 to 7 of the Agenda may be passed by a simple majority provided that no single shareholder or proxy may cast votes in respect of more than one fifth of the issued share capital or more than two fifths of all shares represented at the meeting.

The resolution concerning Item 8 of the Agenda requires a majority of at least two thirds of the votes of the shareholders present or represented, provided there is a quorum of at least fifty percent of issued share capital. There is no limitation as to the number of shares for which any shareholder or proxy may cast votes.

Copies of this notice and of the Annual Report, including the financial statements of TDB Holding for the year ended 31st December, 1983, may be obtained at its registered office, and from any of the banks at the following addresses:

*Manufacturers Hanover Limited, 8 Princes Street, London EC2P 2EN.
*Banque Internationale à Luxembourg S.A., 2, Boulevard Royal, Luxembourg.
*Manufacturers Hanover Bank Belgium, 13, Rue de Ligne, 1000 Brussels.
*Manufacturers Hanover Banque Nordique, 20, Rue de la Ville-L'Evêque, 75008 Paris.
*Manufacturers Hanover Trust Company, 40 Wall Street, New York, N.Y. 10015.
*Manufacturers Hanover Trust Company, Bockenheimer Landstr. 51/53, Frankfurt.
*Republic National Bank of New York, 452 Fifth Avenue, New York, N.Y. 10018.
Trade Development Bank, 25, Corso S. Gottardo, 6830 Chiasso.
*Trade Development Bank, 30 Monument Street, London EC3R 8LH.
Trade Development Bank (France) S.A., 20, Place Vendôme, 75001 Paris.
*Trade Development Bank (Luxembourg) S.A., 34, Avenue de la Porte-Neuve, Luxembourg.
Trade Development Bank, 2, Place du Lac, 1204 Geneva.

*Paying Agent of TDB Holding.

مكتبة الأستاذ

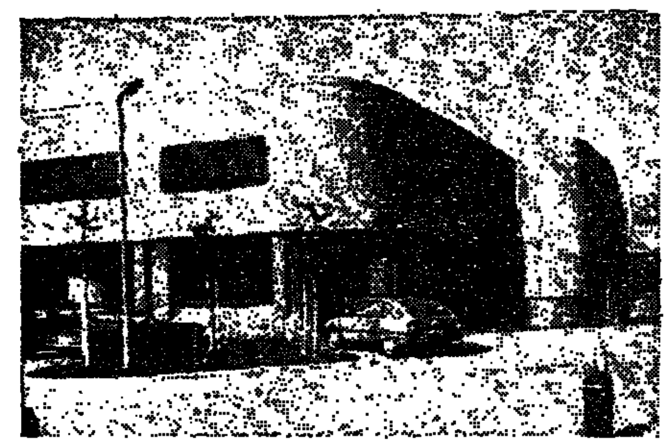
SECTION III

FINANCIAL TIMES SURVEY

Coil Coating

The merits of coil coating—the process which enables steel or aluminium strip to be bought already painted—are becoming more widely known, and expansion, already rapid, is accelerating. With so much at stake, the industry's leaders, particularly the paint makers, are engaged in a major battle for market shares

Above: Europe's newest coil coater, Mr Brian Proctor, at his Cladcolour line at Newport, South Wales. The company started operations last week. Will it be a thorn in the side of British Steel? See Page II. Below: corners do not have to be round as this design in coil coated steel from the Dutch company Hunter Douglas proves



CONTENTS

The gospel spreads

SURVEY BY IAN HAMILTON FAZEY

VIGOROUS GROWTH remains the main feature of the coil coating industry in Europe. Despite recession, sales in this high technology sector continue to burgeon and there are now signs of them accelerating with economic recovery.

Knowledge of what coil coating actually is has been spreading as the industry has reorganised its marketing, and this is likely to add further to present growth. Coil coaters and paint makers are now making sales approaches to pension funds, architects, building specifiers, and manufacturing industry to spread their gospel directly to increasingly more decision-makers.

That gospel is that it pays to use pre-coated steel and aluminium for buildings and for making things. "Pre-coated," in fact, means "pre-finished."

The process enables steel or aluminium strip to be bought already painted. Such have been the advances in metallurgy and paint technology that the strip can be formed, bent, drawn, seamed or put through most other industrial practices without the coating being damaged.

The industry gets its name from the fact that the steel or aluminium strip leaves the mills where it is made rolled up into coils. Coil coaters then unroll the coils, paint them by running them down a highly automated production line at considerable speed, and then roll them up again to be sold to manufacturers as coated coils.

The technology is complex, requiring considerable skill in pre-treatment of the metal to produce a clean surface to which a series of coats of paint will stick. The coating are usually applied by rollers and dried, or cured, in minutes by running the line through long ovens.

The quality of the painting and the performance of the coated strip are monitored continuously, with frequent testing in on-site laboratories to ensure that the finished material will perform in the way the coaters say it will.

The people who buy coated strip then use it to make an increasing multiplicity of items. Chief among them are profiled claddings for the walls and roofs of buildings, but other familiar products made from pre-finished steel or aluminium include non-stick pots and pans, refrigerators, microwave ovens, venetian blinds, caravans, elecstick. The coatings are usually pin head covers for babies' nappies, drainpipes, guttering, gas fires and garage doors.

The chief advantage offered to manufacturing industry is that paint shops are no longer needed at the end of production lines. Not only is this cheaper because it means employing few people, but there are usually considerable savings on energy, health and safety precautions, and effluent and emission control.

On top of that, people who have switched have reported intangible benefits from being more easily able to keep factories clean.

Such savings have undoubtedly helped coil coating to continue to grow throughout the recession. Indeed, recession inspired many manufacturers to look for cheaper, more efficient ways of making their goods and was therefore probably more of a help than a hindrance.

Without the recession many manufacturers might have continued to say: "Why change when we're doing all right as we are?"

The European industry's statistics for 1983 are still being collated but are expected to show sharp rises in several sectors as economic recovery found a firmer foothold during the year. One very encouraging general sign was a 102 per cent increase in stockholding of coated coils in the first quarter alone. The new level was maintained in the second quarter.

Since stockholding grew by only 3.2 per cent for coated steel coils in the whole of 1982, and fell by 12 per cent in the much smaller aluminium sector, the early returns for 1983 have to represent a considerable increase in general confidence.

This is reflected in the figures for total sales of coated coils, which showed year-on-year gains of 16.3 per cent in the first quarter of 1983 to accelerate to a figure of 20.4 per cent in the second, a growth which has pleasantly surprised even the optimists who now run the Brussels headquarters of the European Coil Coating Association.

Even 1982, the last for which full figures are available and the worst year of the recession for the industry, showed good growth for steel.

Aluminium, which suffered from world price rises that forced up the cost of aluminium coils by 50 per cent, struggled to only 1.5 per cent growth overall, but the wonder there is that its use grew at all, which must be another sort of tribute to coil coating's benefits.

Steel, however, put on 10.1 per cent across Europe, and British Steel, Europe's biggest coil coater, did as well as anyone. Sales of coated coils to the building sector were up 7.3 per cent and to industry they rose by a staggering 16 per cent. Exports outside Europe went up by 15 per cent.

And this was a bad year, as can be seen when the growth of the use of coated coil is looked at on a five-year basis from 1978 to 1982. This analysis shows the building sector's rate of usage up by 75 per cent, industry's up by 69 per cent, and stockholding (an important commercial activity by which several companies make substantial profits) up 79 per cent. Exports, which peaked in 1979, and then dipped in 1980, climbed back steadily to 1978 levels.

A similar pattern emerges for coated aluminium, although the greater expense of the metal leads to lower sales volumes and slower growth. Never the less, the rate of its use in building products was up 32 per cent in 1982 compared with 1978, with industry taking 54 per cent more. Exports, however, often involving large building contracts in the Middle East were up 60 per cent.

But although Europe's main coil coaters compete with each other in export markets outside their home continent, there is relatively little international competition within Europe itself. This is inevitable when the biggest coaters are steelmakers, each of them firmly rooted in a national domestic market.

Competition is possible, theoretically, on finished goods such as coated strip but can only be described as marginal when looked at dispassionately in marketing terms. A nationalised market leader, for example, might have a market share in excess of 75 per cent.

The true competition in coil coating markets is among paint suppliers and here things are in a state of considerable flux. The Swedish paintmaker, Becker—which has bought technically advanced subsidiaries in Britain, France and Germany and is on the lookout for more—leads in terms of share of the coil coating market.

But ICI, which has also bought technically advanced subsidiaries in Britain, France and Germany, is fighting hard to catch up and is likely to bring an increasing amount of unique experience into the technology from its Australian subsidiary, Dulux.

Meanwhile, Courtauld's subsidiary, International Paint, is working hard to make an impact in coil coating and, like ICI, is developing new coating it hopes will expand the total market. International has already made its mark by developing the paint for Hotpoint to make Iced Diamond refrigerators from coil coated British Steel.

Meanwhile, too, other large European paint companies have looked at the British market and decided that they must carry the fight beyond their traditional boundaries. Thus Sigma Coating, the paints subsidiary of the Belgium-based Petrofina group, has started a push in Britain in coil coating.

The French paint company Ripolin-Duco is also making a determined assault on the British coil coatings market. It intends to distribute through Hadfields Industrial Coatings, part of the privately-owned Kalon group. Ripolin-Duco has a licence for the U.S.'s leading PVC coating system, though it will face an uphill battle to get orders from British Steel, which developed its own formulation for such coatings and is unlikely to change.

As the European and world economies recover from recession, however, coil coaters and paintmakers are looking to high-technology fluorocarbon paints as the most important factor for fast growth. The building industry, which uses more than 50 per cent of coil coated products, holds the key to how this market is going to develop.

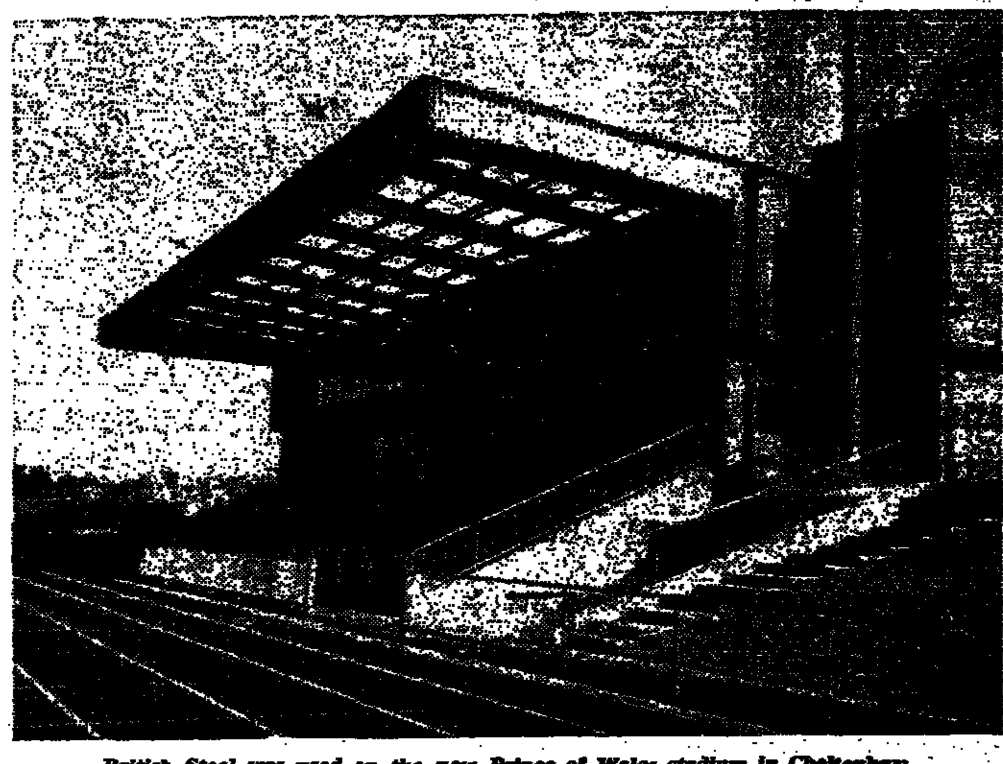
Fluorocarbon coatings are practically indestructible and need be applied only thinly, enabling coil coating lines to be run faster and more efficiently. Durability of colours is another asset, especially in prestigious buildings.

That is why people who invest in such buildings, such as pension fund managers, are prime targets for the industry's marketeers, while exciting design possibilities are being sold to architects.

There is no sign that growth is going to stop.

COIL COATINGS II

On this page and the next, a look at the fortunes of five coaters competing for a share of a fast-growing market



British Steel was used on the new Prince of Wales stadium in Cheltenham

British Steel

Europe's frontrunner

BRITISH STEEL is expecting its coil coating business to grow by at least 10 per cent in 1984 to push output past 200,000 tonnes of coated metal.

Last year's figures missed that landmark by about 10,000 tonnes, but since that represented full capacity on two-shift working, anything over it is a significant development.

With capacity available for about 300,000 tonnes a year, British Steel can claim to be Europe's biggest coil coater already. However, even this is not expected to be enough: £25m is to be spent at Shotton, in North Wales, to open another line in 1986 that will expand the range of products and applications even further.

These, of course, may well be yet more signs that the UK economy is really beginning to recover from recession, but British Steel's growing sales of coated coils also reflect considerable export successes—up by more than 20 per cent to account for two-fifths of output.

It is, however, in the home market that British Steel dominates and it is a tribute to its approach to coil coating that it does so with products that in some cases cost 20 per cent more in home markets than their counterparts in Europe.

For British Steel's approach from the outset was market oriented, asking what the products were worth to customers rather than grossing up added value on raw material costs and then superimposing a profit margin.

The latter approach was favoured by steelmakers in Germany, France and Sweden, betraying the production orientation typical of the industry. Now, says Mr Peter Burling, British Steel's commercial manager for special products "the Continentals have at last realised that they have missed this trick and are trying to raise their home prices."

Why these price differentials have not mattered from a competitive point of view is that each country's steel industry has a virtual monopoly in its home market—would-be competitors put British Steel's share at 78 per cent—though they all fight each other on prices for exports outside Europe.

Nevertheless, British Steel is vulnerable in Britain to anyone willing to work hard enough to break in. There is some evidence, indeed, that one Belgian company has realised that steel import quotas do not apply to finished goods and is undercutting British Steel in Britain with 20 per cent lower prices.

And at British Steel itself there is a little sensitivity about Cladcolour starting up just down the road from Mr Burling's office in Llanwern. Not a single tonne is likely to be ceded, which could well mean flexibility on prices.

However, the U.S.-owned H. H. Robertson has co-existed with British Steel for years, buying its coils direct from Shotton to coat at its Ellesmere Port factory. Robertson works on a total design concept, coating steel specifically for each building job, from the Centre Court roof at Wimbledon to complicated flooring systems for large computer rooms.

What British Steel can boast is more know-how than anyone else. Britain's steel industry has been in coil coating for more than 25 years. "There is no one in Europe with that length of experience," Mr Burling says.

This factor could be very important long term, especially with people making large investment decisions in buildings who want to be certain of availability of service from the supplier that will last as long as the building—which could be 50 years.

Promotion

It is these people and their advisers to whom British Steel is now promoting hard. In January the corporation published an impressive cladding manual for architects and specifiers, following up with audio-visual presentations around the country.

The manual is, quite literally, weighty, tipping the scales at nearly 5lb. One reason for this is that it contains lots of little samples in plastic wallets of steel strip coated with plastisols and fluorocarbon paints which are far superior to colour cards in allowing true assessment of colour and texture.

The manual is also replete with technical data sheets and guides to good architectural practice in the use of coated steel. Photographs of some spectacularly designed buildings are enough to goad even the most placid architect into artistic competition.

The corporation is employing staff to tour architects' offices updating the manual several times a year.

Mr Burling is also working hard at other markets, such as domestic appliances, office furniture, steel drums, and car and building components.

Here, British Steel runs a product development centre at Shotton which studies problems of production engineering using pre-finished steel. "If the potential volume is big enough we will offer this as a service to anyone," Mr Burling says. This includes consultancy by engineers and technical staff and even the building of prototypes.

What the corporation has decided not to do is produce zincrometal, a zinc-rich corrosion resistant coating for steel used extensively in the U.S. and, now, Japan, for car components. It holds the British licence for this but will not go into production unless a major car producer opts to use it. Nissan's recent decision to use it in Japan may, however, be an omen here for when the company starts UK production.

What British Steel will be producing is Galvalume and it is for this that the new line is being built at Shotton. This is steel coated with a 45:55 mixture of aluminium and zinc which has four times the corrosion resistance of galvanised steel and greater strength at the surface.

Mr Burling says: "This will given even better corrosion protection to buildings and will perform better in heat, such as in car exhausts. It will also be more flexible, so bend radii will be tighter. We should also be able to apply thinner coatings."

The prospects look good and are getting better for what is, for British Steel, a rare success story, even if a few competitors are now beginning to nibble around the feet of the giant.

Cladcolour

Buyer turned supplier

BRITAIN'S LATEST coil coater started operations last week in a disused strip mill in British Steel's Whitehead works in Newport. Cladcolour, which used to buy coated steel from the corporation to make profiled panels for the building industry, has now set up in competition, and will be calling its product Colorcoil.

"I'm afraid British Steel see us as a thorn in their side," says Cladcolour's owner, Mr Brian Proctor. "Actually, we hope to be no more than a pinprick. We only need a small piece of the market."

Mr Proctor used to work for British Steel, selling coated coil. He left to set up his own stockholding company in the early 1970s, but sold the business in 1978 to become a profiler. He is financing his new venture out of retained profits, loans from FCFC and assistance from the Welsh Office and Welsh Development Agency.

The £1.6m investment is creating 30 new jobs immediately and he hopes to add a similar number eventually to increase his workforce to 80.

The irony is that Cladcolour's factory is an island surrounded by British Steel land within a British Steel perimeter fence. Mr Proctor did not tell the corporation exactly what he intended to do with the old mill but he did make sure that the sale agreement gave him permanent rights of access.

Opportunity

To compete with British Steel's main product, plastisol coated claddings, Mr Proctor needed a paint supplier with no pitch to queer at British Steel. This has provided just the opportunity the Belgian paintmaker subsidiary of Petrofina, Sigma Coatings, was looking for to get a toehold in Britain.

Sigma's Mr John Cunningham says that the company will be supplying Cladcolour with at least 70 per cent of its coatings. With any paint supplier's technical back-up critical to guaranteeing coil coating quality, the project might have been doomed without such support.

Mr Proctor's marketing strategy will not be to play David to British Steel's Goliath but to find a small, complementary niche. "Their minimum order is 10 tonnes," he says. "We shall go down as low as two. Our budget will be 7,000 tonnes in our first year, rising to 25,000 in 1987.

"We haven't got the capacity to be a real nuisance to them. But there has only been one general supplier all the time I've been in the industry since 1965. The market can take some flexibility. I'm not going to undercut British Steel; service, availability and reliability have always been more important in this business than price," Mr Proctor says.

The final irony, of course, is the very stuff Cladcolour will be coating—British Steel.

Custom Coil Coaters

Step-by-step approach pays off

SUCH IS the impact of Custom Coil Coaters on its markets that the company, which operates from a small factory in the heart of the English Black Country, has seen turnover grow by an annual 20 per cent for each of the past three years.

Profitability has been maintained throughout the recession and the best testament to the company's confidence is its recent investment of £250,000 in a new coil coating line.

According to Mr Don Large, the managing director: "Our philosophy is to cover as many markets as we can. We don't sell on price, but delivery, service and quality. We can fill new orders in only four weeks and that has seen us supply small domestic appliances to Australia faster than their home producers."

As its name suggests, the company coats coil for specific requirements. It operates on narrower widths, making very many small items that most people take for granted, such as clock faces, car instrument dials, film cassettes for Polaroid cameras, and bottle caps.

Some products are more substantial, such as bakeware and holloware and suspended ceilings. There are architectural products for the building industry and small domestic appliances which need specialised heat resistant coatings, such as sandwich toasters

"With some of these products we seem to have cornered the UK market," says Mr Large, who is widely known in the automotive industry for having previously managed Jensen Cars — in Custom Coil Coaters' home town of West Bromwich—and the Linwood Plant for Chrysler in Scotland.

The company is part of the Wolverhampton engineering group, Frederick Cooper, and contributes about 40 per cent of the group's £20m turnover. Cooper is probably best known for making horseshoe nails, which it exports all over the world.

Custom Coil is also strong on export, with 35 per cent of sales now going abroad. Mr Large says: "Ten years ago we were doing fairly standard work, such as coating narrow strip for specialised uses. Then we started playing about with bakeware."

That "playing about"—the company sets aside one-and-half shifts per month to use its coil coating lines for R & D—has eventually led to the development of some impressive kitchenware, coated with Du Pont non-stick finishes on the inside and Crown Paints heat-resistant, brightly coloured coatings on the other.

Hallmark

Custom Coil has developed the coating process—and with Du Pont and Crown the coatings themselves—so that the kitchenware can be drawn, stamped and bent from the coated coil without the pre-finished surfaces being damaged or becoming unstuck.

The newest R & D programme at the company is concerned with coating zinc strip. The paint is electrically conducting and the coated zinc will be mass-produced for making batteries if Custom Coil succeeds. The development is being done with a major battery manufacturer.

Mr Large says: "There are still problems to overcome but we have been through this mill with every new thing we ever did. It took three or four years to get the bakeware right but it was well worthwhile."

A step-by-step approach has also been the hallmark of expansion abroad. The company started selling in France and Germany, secured its position, and then expanded elsewhere in Europe before venturing further afield, leaving the U.S. market until last.

The management's only fear is of success forcing too-rapid growth. There are only 65 employees in the highly capital intensive business and the management team is basically Mr Large and his technical and sales directors.

He says: "We can take decisions and respond quickly. One of the problems would be running the company if we become too big."

UK aluminium coaters

Alcan and Euramax fight it out

A NEW confidence has emerged among British Alcan's coil coaters in Birmingham. A year ago they were smarting at having lost their biggest customer, Euramax—which had just opened its own coil coating line in Corby—and not a little worried.

Today it is the Euramax managers who are looking edgy while the Alcan men are exultant. Alcan's man in charge, Mr Peter Gibbs, has just been promoted to a works directorship in Scotland and the company is about to make a substantial investment in its ancient coil coating line, which is now making profits.

One of the reasons why Euramax opted to become a coater was an understandable fear that the long-unprofitable Alcan line would be closed down. Euramax needed to safeguard its suppliers of coated aluminium for its caravan business but saw a chance too of picking up the whole British market with a new, efficient line if Alcan dropped out.

Marketing director Mr Bob Horton says that the investment decision was based on the worst possible scenario and that Euramax is on budget.

It has also changed its chief executive: Mr Roger Walters became managing director in August after previously leaving his last job as head of Alcan's building building products division. Mr Walters says: "We have more than matched our predictions. If our competitors want to think we are not making progress, that suits us fine."

Why Alcan's managers are exultant is that, having been reorganised and virtually given a last chance to save their coil coating line, they have done so. The turnround in contribution between 1983 and 1982 was £250,000. In 1984, the Birmingham plant is heading for £500,000 better than that—even though its success has prompted Alcan accountants to demand that it now bears a larger share of group overheads.

This has happened despite rising aluminium prices—the cost of coils has gone up by 50 per cent—and a frustrated, large export order to Nigeria. Nevertheless, the company managed to coat 5,500 tonnes in 1983, compared with the 6,000 it budgeted for with the two crises unforeseen.

Part of this is due to the success of Alcan's new coating, Duralcote 80, a fluorocarbon-based paint which it claims has superior resistance to damage, abrasion, vandalism, stains, chemicals and ultraviolet light. It took an immediate 15 per cent share of Alcan's volume last year and sales manager, Mr Roy Shearing, says that this will double during 1984.

At the same time the spread of end uses is widening. Alcan used to be almost exclusively in buildings and caravans. The latter's share is expected to be only 30 per cent of volume this year—compared with half in 1982—with building's share also dipping as transport and guttering nudge towards 8 per cent each, dials reach five and "miscellaneous" creeps up to one-tenth of the total.

Alcan's line has recently gone into profit and the company is to spend substantial funds modernising it

Success has prised investment out of Alcan headquarters, with £140,000 being spent on the line immediately and more promised. Mr Derek Sibley, the technical manager, says that this is going into updated testing equipment and computerised laboratory facilities that will improve cataloguing of coatings so that consistency can be improved further.

Longer term, the line's pre-treatment system is to be replaced with modern, cold, no-rinse technology that will save energy and cut anti-pollution costs.

This will also create space in the line and there are hints that this could allow the installation of a new coater developed by Alcan in Canada which dispenses with rollers and enables random two-tone patterns to be applied.

The paint comes out of a narrow slit stretching across the width of the aluminium strip. A series of computer-controlled solenoid valves can be used to apply a second colour in random squiggles, so that woodgrain can be imitated exactly, with no chance of the pattern repeating itself.

Meanwhile, Euramax's brand new line has just been worked on to improve its heat recovery efficiency. No one admits to this not matching expectations but there would be no point in doing the work for the sake of it.

Euramax refuses to give production figures, claiming these would help Alcan but says that it had coated its first 1,000 tonnes by the end of last August.

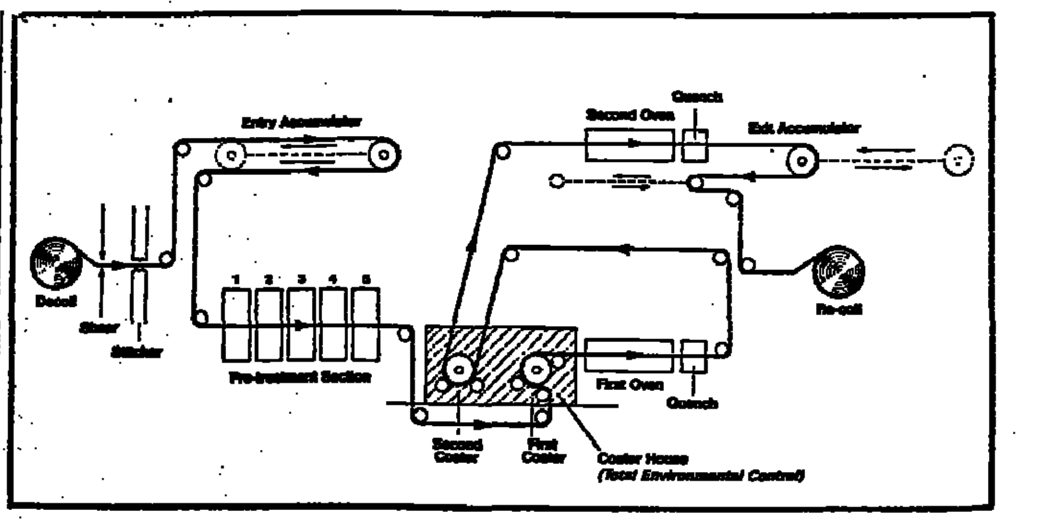
But depression in the caravan market suggests that it is a long way off the annual 2,500 tonnes it used to buy from Alcan in peak times, though Mr David Brown, the sales director, says that this sort of annual rate is more likely by the end of the year.

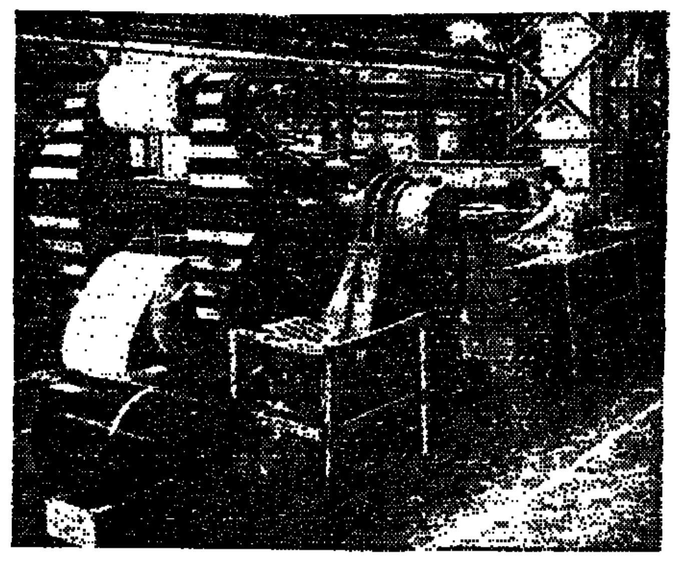
Euramax's big achievement, however, has been to get its new line going while at the same time building a new factory next door so that it could move its caravan cladding operation from Tring—the sort of corporate traumas that cause nightmares.

The new factory is in coated aluminium and an impressive testament to what the new line can produce. At the same time, even more recent investment has seen a coil slitting system installed and an embosser. These are expected to help entry into a wide variety of miscellaneous markets.

Euromax has also carried out a very unusual experiment, coating a coil of Aluzinc—steel with an aluminium-zinc coating on its surface—to see if it could be done. It worked, raising intriguing long-term possibilities about which no one at the company will speculate.

How is Euramax really doing? Poker-faced, and giving nothing away, Mr Walters points out cryptically that the company's parent, the U.S.-owned Alumax Aluminium, has never made a loss in any quarter in its history. He says: "Despite price rises we have maintained margins and made a positive contribution. We have consolidated operations and learned more with each month that has passed—and we hope we are getting more clever all the time."





Above: a diagram of Euramax's Corby line. Right: Alcan's Birmingham line.

The coil coating process

What it means, how it works

COIL COATING is a simple process requiring complex technology. Its basic premise is that the easiest way to paint a sheet of metal is to lay it flat, thus ensuring an even coating of consistent quality. The process is simply the means of doing just that.

But the most sensible way to make, transport or store steel or aluminium sheet is to do so in coils. The metal comes out of the mill in a long strip that is literally rolled up. Coil coating technology is concerned with painting these coils.

It is done on a continuous, automated production line, with the coils of metal being unrolled at one end, passed through pre-treatment tanks to clean the surface and ensure that the paint will stick, then roller painted, dried, and rolled up again.

Why this simple operation is in fact complex is because the strip—itself up to five feet wide—may well be passed along a modern coil coating line at up to 300 metres a minute, or 12 miles per hour. Stitching machinery can ensure that the line can run for hours at a time, with a new coil attached to the one in front of it as it runs out.

A line may be several hundred yards long and the metal strip may have to be painted three times—a backing coat or lacquer on the "back" or bottom side, and a primer plus a topcoat on the "front" or topside. The paint therefore has to be special, capable of drying quickly as the strip passes through a series of ovens.

The stages are known as "coating" and "baking." Most lines are "two coat, two bake," meaning that the process goes de-coil, pretreat, apply backer, apply primer, bake dry, apply topcoat, bake dry, re-coil.

Older lines with only one drying oven have to pass coils through twice, necessitating down-time in changing paint. Some of the most modern lines have facilities for a three coat, three bake process. Most of these are in Japan but a recent study tour by European coil coaters revealed that no one is applying a third coat or using the third oven—yet.

On some lines there is also a facility after applying the final coat to laminate a film onto the surface. On some lines this film, or a thick coating, may have a pattern applied to it by passing the coated coil through an embosser before re-coiling.

During recession most lines have been working at well below capacity, so speed has not been crucial. Speeds will pick up with economic recovery and those old lines that are not yet almost fully controlled with microprocessors, will probably have to be so automated in order to stay competitive.

Manning levels on the lines are low in Europe and North America, but 30 to 50 per cent lower in Japan. Most coaters are also steelmakers. In Europe, British Steel and Germany's Hoescht dominate production and development of the technology. They are in virtual control of their respective home markets, despite aggressive marketing by the Benelux company, Phenix, which has a creditable 10 per cent market share.

Aluminium coaters are, relatively, few and far between, reflecting lower demand for a more expensive product and an increasing range of uses for steel as coatings improve and wipe out aluminium's former advantage of greater corrosion resistance as a substrate—which brings us to the coatings themselves.

These have come a long way since the first coil coating lines were built 40 years ago to coat narrow strip for venetian blinds. What dictates the choice of coating is the end-use for the finished metal.

If it is to be used for making caravans, for example, a high-gloss will be required but if kitchen bakeware is being made, the coating may well be non-stick on one side and thermoplastic resin on the other. If the finished material is to be vigorously formed—requiring, say, bends through 180 degrees, or deep drawing—the paint will have to be formulated so that it remains intact and does not lose adhesion from the metal when bent.

The properties required of paints compound the high-technology content of the industry. So does drying them, since the ovens will often be driving off polluting hydrocarbons used as solvents. This has led to elaborate catalytic cracking systems for the gases concerned, with heat being recycled back to the ovens so as to save energy.

The principal coatings

Acrylic: Flows well to give perfect finishing and good flexibility when formed, but has an outdoor life of only seven years. Price factor 1.*

Polyester: Can be tailor-made to any end-use, with formulations variable to give wide ranges of gloss, weathering, flexibility, chemical resistance or deep drawing capability. Outdoor exposure life is ten years plus. Price factor 1+, depending on formulation.

Silicone polyester: Polyester modified with silicone resin to increase outdoor life to 15 years. Relatively poor flexibility when formed, and can be degraded by bacteria. Price factor 2—

Plastisol: A dispersion of polyvinyl chloride (PVC) with plasticisers, applied at up to ten times the thickness of normal paints. Dark colours are degradable by bright sunlight so use is restricted south of the Alps. Thickness allows it to withstand carelessness and abuse on building sites. British Steel's main coating for building industry. Price 2.5 to 3.5.

Fluorocarbons: usually a mixture of polyvinylidene fluoride (PVDF or PVF2) and acrylic. Almost indestructible. Superior in all properties to all other coatings. Cost depends on proportion of PVDF in formulation, with Class A paints containing 70 per cent and Class B, 50 per cent. Price factor 2.5 to 4+.

Non-stick: main ingredient is polytetrafluorethylene (PTFE) but this has such non-stick qualities that it has to be mixed with polyethersulphone (PES) to coat anything at all. PES can itself be used as a coating for end-uses requiring high heat resistance, as in bakeware. Price factor varies too much with end use for generalisation.

**Prices vary with formulation and volume, so can only be indicated relatively to each other.*

Fluorocarbon paints

The suppliers' key to future prosperity

ACCORDING to Mr John Gattley, Pennwalt Plastics' UK director, the company is "big in little things." The approach has worked well enough to see the Philadelphia-based company, which has its own fluorspar mine, to worldwide sales of $1,000m a year and nearly 20,000 employees.

One of the "little things" is a fluorocarbon resin called Kynar 500, Pennwalt's brand name for polyvinylidene fluoride, which in turn is more generally known as PVDF or PVF2. It is practically indestructible and, when mixed with a flowing acrylic paint, it provides steel sheet with a Rolls-Royce coating.

According to ICI's Dr Bob McGuinness: "It is a ridiculously priced product but they've got the lot of us over a barrel."

Prudent

Pennwalt knows it: it is the world's only volume producer of PVDF for the world's paintmakers. And even though the strength of the dollar has encouraged Atochem in France and SKW in West Germany to start producing a similar type of PVDF in the last year, "me too" products always have an uphill fight against a well-established market leader—especially one prepared to guarantee buildings using Kynar-based paints against corrosion for decades.

Nevertheless, Pennwalt has felt it prudent to absorb some of the impact of the strong dollar, especially since there is an EEC tariff of 14 per cent against Kynar as an import from the U.S.

Since it is theoretically possible for companies in former EFTA countries like Sweden to escape this—so that their Kynar-based paints could be cheaper when sold into the EEC—British, French, Italian and German paintmakers are understandably suspicious, though the multinational nature and ties of the only companies which could be involved make such a practice unlikely.

Kynar's indestructibility has opened three worldwide markets. The first, linings for chemical plant, has been quiet during the recession but the second, electrical insulation, has been boosted by a change in U.S. building regulations for air-conditioned buildings (PVC is being superseded because it is dangerous in fires; Kynar-based plastics are fire-resistant).

The third market, which accounts for a third of world sales but 70 per cent of sales in Europe, is in coatings.

Pennwalt sees the prospects for Kynar expanding mightily as all three markets grow between now and the end of the century. It has already extended its factory in Kentucky to up production by one-third and it is building a new plant in New Jersey so as to double this expanded capacity by May next year.

Mr Gattley says: "We don't disclose how much we make. Hopefully, the new capacity will see us into the 1990s."

Pennwalt's system of getting Kynar into paint is another reason why only the most technically capable paintmakers with enough financial resources to take the longer view can hope to survive in the high volume side of coil coating.

The company operates a licensing system and is very choosy to whom it will sell the technology. Mr Gattley says: "Our policy is only to grant Kynar licences to people with technological expertise. We always require evidence that coatings they develop will last."

Inevitably, therefore, the 21 European licences are concentrated in Britain, France, Germany, Poland, Finland, Sweden, Belgium and Italy among a few leading paintmakers and their subsidiaries. Becker has four of them, ICI and International two each, Hoechst—through Herberts in Germany and Berger in Britain—also has two.

Britain has the largest number, through Becker, Berger, Goodlass Wall, ICI and International, followed by Germany with four, through Herberts, Wiederhold, Wulfing and Mehnert & Veeck.

Add the names of some of the other licensees, such as Corona and Ripolin-Duco in France, Sigma in Belgium, and Max Meyer, Italver Pittsburg and Salchi in Italy, and you have an almost definitive list of which companies matter most in European, if not world, paint technology.

The significance of this is that long term prospects for high sales volumes to the European coil coating market are likely to depend on growing use of fluorocarbon coatings on building claddings. This is the area and these are the products that most in the industry see as likeliest for sustained growth.

Companies without a Kynar licence *are going to be left in* the cold, probably concentrating on small but profitable specialised markets, such as holloware and bakeware, or carving ever-deeper niches for themselves in "old technology," such as plastisol.

The major benefit is that buildings are likely to be sound 40 years after construction

The big companies, all of which need to shift large volumes, will almost certainly dominate. The edge to their fight for share in the new market is intensified by other pressures, such as, in International's case, losing traditional markets through there being fewer ships to paint, or in ICI's, through realising that many of the things it paints now (such as steel drums) will eventually be made from pre-finished coil.

On top of that there is already a hare in the race in Sweden's Becker, which though not in the same general *international paintmaking league as*, say, Hoechst, ICI or Sigma, recognised the future significance of coil ahead of most others.

Becker's coil coating sales are about 20 per cent of its turnover in industrial paints. It claims a 20 per cent share of the market in Europe. Significantly, when it expanded into European manufacture and marketing by acquiring Conway Coatings in Britain, Bichon in France, and Wulfing in Germany, the fact that they had Kynar licences, or were technically good enough to win one, was critical.

The result is that Becker now has the widest geographical spread of Kynar licences and the largest number.

The picture then, among the Kynar licensees, is of most of them *servicing and doing best* in home markets, but with the Becker group racing ahead on a pan-European basis, hotly pursued, from some way behind by the ICI group, International (which has a subsidiary on Becker home ground in Sweden) and the two Hoechst paint companies.

Meanwhile, trying to elbow its way into Britain now is another Kynar licensee, Sigma Coatings, the paintmaking subsidiary of the Belgian-based petrochemicals group, Petrofina. Sigma is by far the largest supplier (it claims a 70-plus per cent share) of all types of paint to the Belgian steelmaker, Phenix, which in turn has a 10 per cent share of European coated steel.

Sigma also sells to coil coaters in France, Germany, Italy, Switzerland and Scandinavia but John Conningham, senior manager in charge, admits that in Britain "We've been observers for most of the last five years."

The drive is on now to break in, though as the main supplier of plastisol to Cladcolour, which is starting up its own small coil coating operation in South Wales, Sigma may not have endeared itself to a stung British Steel.

The fundamental assumption behind this massive commitment of resources by so many international companies is that fluorocarbon paint technology holds the key to future prosperity for coil coating suppliers. This in itself relies on another assumption — that the building industry is going to increasingly turn to coil coated fluorocarbons for claddings.

Why should it? An important reason is that fluorocarbon paints are living up to the claims made of them all over the world. Their critical property seems to be that Kynar is invisible to ultra-violet light, which is what does the damage to most coatings.

This means that UV wavelengths have no effect on the resin at all and the pigment of the paint can get on with its job of protecting the substrate without anyone worrying about whether the polymer system is going to break up.

The analogy is with a painted piece of glass: the glass is invisible to light and is unaffected by it, but the paint will stop the light getting through. But paint a sheet of ice and the whole system will fail when the temperature gets hot enough to melt it.

What also happens is that most colours do not fade, so that if someone does crash a fork-lift truck into a factory wall made of coil coated profiled steel sheet the damaged panel can be replaced with an exactly matching one.

For Pennwalt, as it expands Kynar production, it is also critical that its European market develops. To make sure it does so, the company has decided not to rely on coil coaters, most of whom are production-oriented, or even the people it sells to, the paintmakers.

It is itself promoting the properties of fluorocarbon paints directly to architects, designers and people who take decisions to invest in buildings, such as the managers of pension funds.

Reliability

Mr Gattley says: "People are looking for buildings that will last. They want reliability and a high quality of finish."

There are now some spectacular examples around the world of buildings made of steel pre-finished on coil coating lines in Kynar-based paints. The days of coil coated steel being a cheap way of putting up sheds are long gone. Now, "prestigious" is often the word used to describe some of the buildings for which fluorocarbon coatings are being specified.

The major benefit is that the building is likely to be sound 40 years after construction, which could be telling to an investor aiming to let it on a lease of that length and still have a saleable or re-lettable asset at the end of that time.

If new substrates such as Galvalume can guarantee that the steel will match the paint for durability and quality—and the few fluorocarbon failures have involved faulty substrates—then a colourful revolution in building design could be about to take place.

Add to this new paints that can make coil-coated steel look like much more expensive anodised aluminium and it could be a long time before demand for Kynar stops growing. Pennwalt, which is spending $85m on expanding its production, certainly hopes so.

International Paints

Wraps come off son-of-plastisol

INTERNATIONAL PAINTS breakthrough into coil coating was to develop a high-gloss, formable, scratch- and stain-resistant polyester so that Hotpoint's Iced Diamond refrigerators could be made from pre-finished steel.

With domestic appliances earmarked by the industry as a major area for future growth, this seemed to suggest that International was about to corner a substantial portion of a new market, so what the company's management is now saying comes as something of a surprise.

As Michael Pragnell, managing director of industrial coatings, puts it: "I am not sure we can expect to see major growth in domestic appliances. There is potential for significant growth in the UK and Italy but volumes will not be great."

Since International is already the leading supplier of spray paints to white goods makers, it can afford to be sanguine about the matter. It has been talking to Hoover, Lec and AEG about coil coated steel but doubts whether the manufacturers will switch many existing lines to pre-finished material.

The argument becomes different when a new line is being set up—as was the case at Hotpoint—but this sort of investment is unlikely until the world has recovered more substantially from recession.

But International needs to develop in coil coating for several reasons, a principal one of which is that it must replace volume lost in the marine sector caused by the worldwide decline in numbers of ships. The company is still pre-eminent in that field—it has actually increased its share of world markets to 35 per cent—but sees no prospect of substantial growth.

Mr Pragnell says: "In industrial paints, coil coating is volume business. Of that, coated steel claddings for buildings comprise 70 per cent of the market. That is what we have to move into."

Since the claddings market is continuing to expand, there is elbow room for anyone trying to break in but International is anxious not to merely be a "me too" competitor. "We have to bring something new with us," Mr Pragnell says.

The company is therefore going to attack plastisol, the thick PVC coating with which British Steel covers more strip than with anything else. With ICI working on a "nephew of plastisol" the workhorse of the claddings market now faces a pincer assault, but is it even vulnerable?

Substitution

Mr Edward Kent-Coward, a chemist who is International's coil coating products manager, thinks it is. Plastisol has two drawbacks—it is expensive and its very thickness makes it slow to apply on a coil coating line.

With the use of coil coated claddings increasing anyway and economic upturn strengthening, International thinks that British Steel, its main target for plastisol-substitution, will be forced by sheer economics to speed up its lines within the next few years.

Using tough, fluorocarbon coatings—which are thin and therefore fast to apply—may not be the answer since these are at the top of the price range. So International has developed what it thinks could become a new workhorse: it is an eighth of the thickness of plastisol yet, according to Mr Kent-Coward, matches it for robustness while being much cheaper.

It also has phenomenal "stretchability." This is critical if the coated strip is put through some forming processes, which lift microscopic flecks of the galvanised layer from the substrate. These can pierce any thin coating, leading eventually, to corrosion and failure. Plastisol is thick enough to cover such sins but International's new coating is stretchable enough to do so the same job without being pierced.

Mr Kent-Coward says: "We are not saying how we have done it yet. Patents will be applied for. But we have not developed an existing polymer. We defined the properties we wanted and left our research lab on Tyneside alone for two years to develop it from first principles. It is something new in polymer technology."

Encouraged by exceptional results in the laboratory from a year's accelerated tests of stability in ultra violet light and corrosion resistance to heat, salt-spray atmospheres, International has been confident enough to talk about the new coating now.

Normally, there would have been three years of exposure to the elements in the company's test sites in Australia, Florida, Dubai and Sweden before anyone dreamed of saying anything.

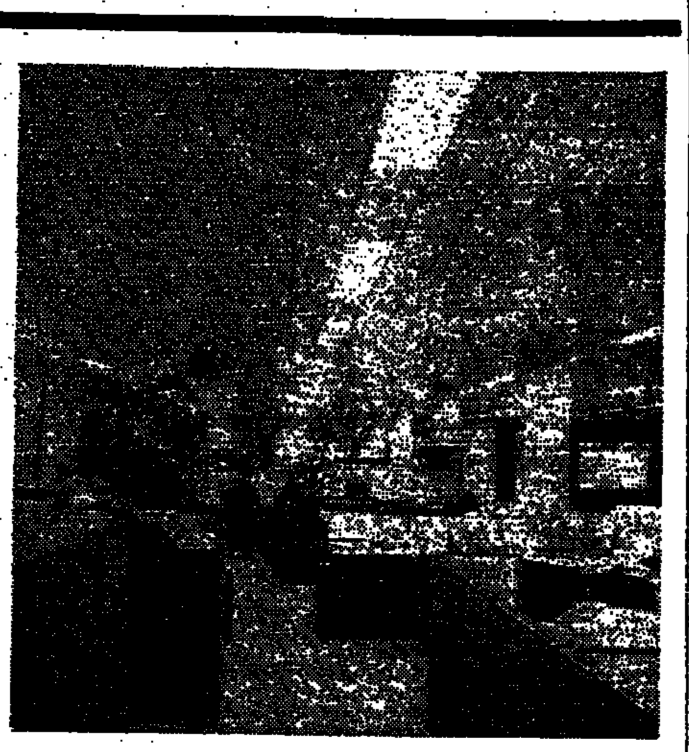
These are going ahead and coaters would probably want to see those results before committing themselves. But the paintmakers see themselves in a long game, which is why, in the end, only the largest international ones with big resources will survive in the coil coating market.

At the same time, however, International does have to put down markers to demonstrate its presence in the marketplace. If its leap into domestic appliances is not going to yield hoped-for sales volumes, it has to show it is in earnest in the buildings sector, which taking the new coating off the secret list does.

Mr Pragnell says that growth in paint sales to coil coaters have grown by an annual 25 per cent for two years. But pressed, he admits that the company is selling about half as much as ICI, which last year ewped up to a miniscule £2m-worth in 1982.

Technological leapfrogging makes a great deal of sense, then, in attacking established markets. When the market is plastisol, risk and corporate boldness would appear to go hand in hand.

Mr Michael Pragnell, managing director: "need for something new"



Coil-coated materials have traditionally been used mainly for exterior cladding and roofing but building interiors are now an important growth area. These photographs show coil-coated ceiling panels and an imaginatively-designed, coil-coated hallway

Crown Paints

'Old hat' product is moneyspinner

FOR A company whose main coal coating product is being constantly knocked as old hat, Crown Paints is remarkably calm about its prospects. The product is plastisol, the thick PVC coating British Steel puts on most of its claddings for the building industry.

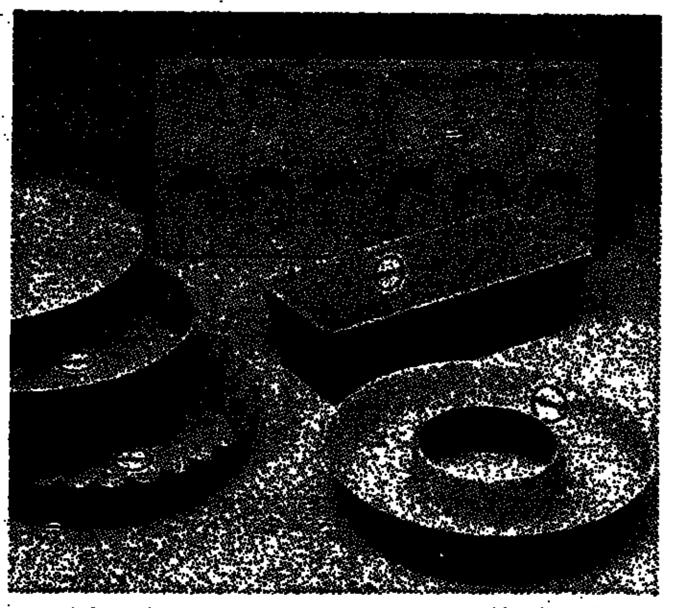
BSC's formulation is its own and three paintmakers—Crown, Berger and Norsk Hydro—make it to specification, an arrangement pooh-poohed by competitors such as Becker and ICI as insufficiently challenging to a real high-tech paintmaker's skills.

All paintmakers in the field can supply plastisols, of course, but BSC has been content to stick to its own well-tried formation. Since BSC plastisol probably accounts for at least £6m-worth of sales each year it must be worthwhile to have a share of that.

Indeed, this figure is much more than what several large international paint companies now trying to elbow their way into the market are selling to coil coaters throughout Europe. Even if ICI's assessment of the situation is correct—which is that plastisol will maintain volume but lose share in expanding buildings markets—Crown, Berger and Norsk Hydro can still make a ot of money out of it.

Plastisol's critics point to its slowness of application, its tendency (in some darker colours) to chalk in strong sunlight, and its expense.

But the other side of the coin is that British Steel has no plans to drop the coating which has been the backbone of its success in coated coil. BSC's Peter Burling points to large numbers of buildings in northern Europe where plastisol has performed well. More than that, many have been up now for the best part of 20 years.



Non-stick kitchenware produced by Custom Coil Coaters has Dupont non-stick coating on the inside and Crown's heat resistant paint on the outside.

It is among these that Crown expects to find and prove new markets—in the maintenance field. Crown's David Parkinson says: "We are the only BSC-approved supplier of overpainting systems for plastisol." The system consists of painting with a special primer to get adhesion and then applying a slicon alkyd topcoat.

"We are putting a lot of time and effort into developing maintenance procedures," says Mr Parkinson. "We see this as a major growth area. If you say that the length of life of a steel building is about 40 years, coil coated plastisol will last for at least 15 before its first maintenance. But you can't just paint it with anything."

Crown, however, does not have all its eggs in the plastisol basket. It is a major supplier to the independent coil coater, H. H. Robertson, which uses British Steel in building applications but coats on a bespoke basis for the particular job in hand.

Crown also supplies to Coated Strip, which coats fiddly bits of narrow width for things like edgings, and Custom Coil Coaters, where it also sees prospects of growth.

This last area is the pots and pans business—bakeware and holloware for the kitchen. Crown claims to have been first to put a wide range of bright colours into pots and pans in 1975.

In those days Crown was also in the non-stick business but has now ceded the field to Du Pont while grabbing the other side — quite literally — of the pots and pans market.

Custom Coil now puts Du Pont's Teflon or Silverstone non-stick on one side of steel coil and Crown's Nuon coating on the other. The pre-finished metal is then formed into products such as jelly moulds, tart trays, flan dishes, or bakeware for the Sunday joint.

Crown's brightly coloured coatings are on the outside of the finished product. Some idea of their properties can be gauged from their ability to withstand three hours' immersion in boiling vegetable oil, two hours in a hot oven, four cycles of heating to 150 degrees centrigrade followed by shock cooling, and then survive being put through 180 degree bend tests without losing adhesion.

Mr Parkinson says: "We are also moving into the small appliance sector, which falls between bakeware and large appliances such as refrigerators. There will be a big battle with the powder coaters and all the manufacturers are trying both technologies, using powder for kettles and coil coating for toasters. The demand for colour in the kitchen is definitely increasing. We think it could be a very good market to be in."

ICI

Intensive attack on UK market

WITH SALES in Continental Europe up 160 per cent last year, ICI is now intensifying its attack on on UK markets, where sales to coil coaters rose by only 9 per cent in 1983.

Significantly, the man in charge, Dr Bob McGuiness, has moved back to Britain from West Germany, where his job involved setting up ICI's coil coating operations with its subsidiary Wiederhold. It is part of an increasingly high profile ICI is adopting in the field.

Having acquired the Birmingham - based Holden Surface Coatings 18 months ago, with its substantial organisation, manufacturing base and markets in France, Dr McGuiness claims that the ICI-Wiederhold-Holden group is now the biggest in European coil coating after the Swedish market leader Becker.

He says that Holden's operations are complementary to ICI's—Holden is big in non-stick coatings, for example, and a fierce competitor of the German company, Weilburger, which has itself opened a UK base in Warrington. The new grouping means that ICI will be able to fight more effectively and on more fronts on a pan-European basis.

But attrition is not the sole strategy, for ICI believes it has an ace up its sleeve that will see it take a great leap forward in 1986. That is when British Steel will start making Galvalume on its new line at Shotton. ICI, if it plays its card right, should be able to grab the major share of paint supplies.

Galvalume is steel strip coated with a 45-55 mixture of aluminium and zinc. Its virtues are four times the corrosion resistance of normal galvanised substrates and greater mechanical strength at the surface, which enables it to withstand more vigorous forming processes.

There is little of it yet in Europe, where the main holders of Bethlehem Steel's licence to produce it are British Steel and the Belgian steelmaker, Phenix. But in the U.S. most Galvalume is used unpainted. Only in Australia, where it comprises much of John Lysaght's output of strip, does it go through coil coating lines.

Lysaght's main supplier of paint for this is ICI's Australian company, Dulux. Dr McGuiness expects European competition for the Galvalume market to be very tough but he also expects ICI's "world group" approach to give it the edge with European coaters. "Only we have real experience," he says.

At the same time, the German steelmaker Hoesch, which has no Galvalume licence, is working on another surface, a 5-95 mixture of aluminium and zinc, which is just outside the Bethlehem Steel patent and is called Galfan. British Steel is also involved.

This raises the possibility that by the end of the 1980s there will be two classes of steel substrate dominating the market in Europe—galvalume for expensive fluorocarbon coatings and galfan for plastisol or polyesters.

Dr McGuiness says: "I would want to see the Lysaght coatings running in British Steel before I would try to make firm predictions, but we are very excited about Galvalume in the UK and Europe. We shall be very careful not to go in at half-cock or bite off more than we can chew but we would hope that we would score in service and technical back-up based on our existing experience."

Meanwhile, work is continuing on developing a "nephew of plastisol" coating.

Dr Bob McGuiness: high hopes for Galvalume market

Here the approach is different from International's, with ICI envisaging a paint system that would give the high-build of plastisol (which enables it to withstand abuse), similar flexibility to cope with vigorous forming processes, but superior weathering properties — plastisol's performance in intense sunlight tends to confine it to temperate zones, such as northern Europe.

Whether this would be used to attack plastisol sales is another matter: Dr McGuiness expects plastisol to lose share in the long term, but only through failing to gain volume in an expanding market for building claddings.

ICI also expects to see coated coil take an increasing share of the drum market, competing with plastics as that technology evolves. It already has the lion's share of paint for drums made by conventional methods so has a vested interest in seeing drums continue to be made of steel but by cheaper means, which coil coating offers.

Dr McGuiness is also much more optimistic than some competitors about coil coaters selling much more pre-finished material for office furniture and domestic appliances.

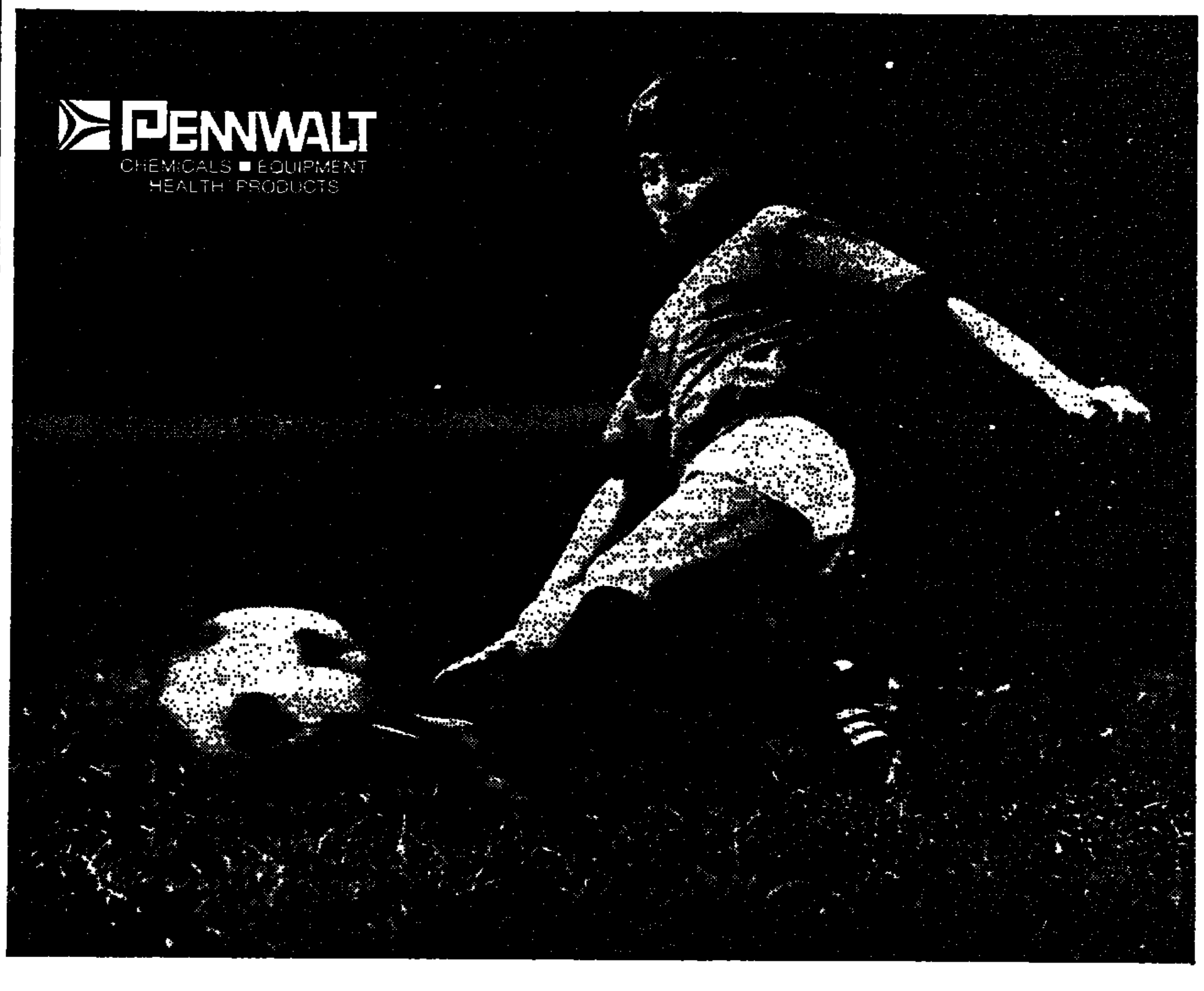
He says: "Hoover have been to-ing and fro-ing. Kassel and AEG are going. About 30,000 tonnes of steel were used in the European domestic appliance market last year. Full credit to International Paint for their work with Hotpoint. They did the whole industry a favour but the rest of us have now caught up."

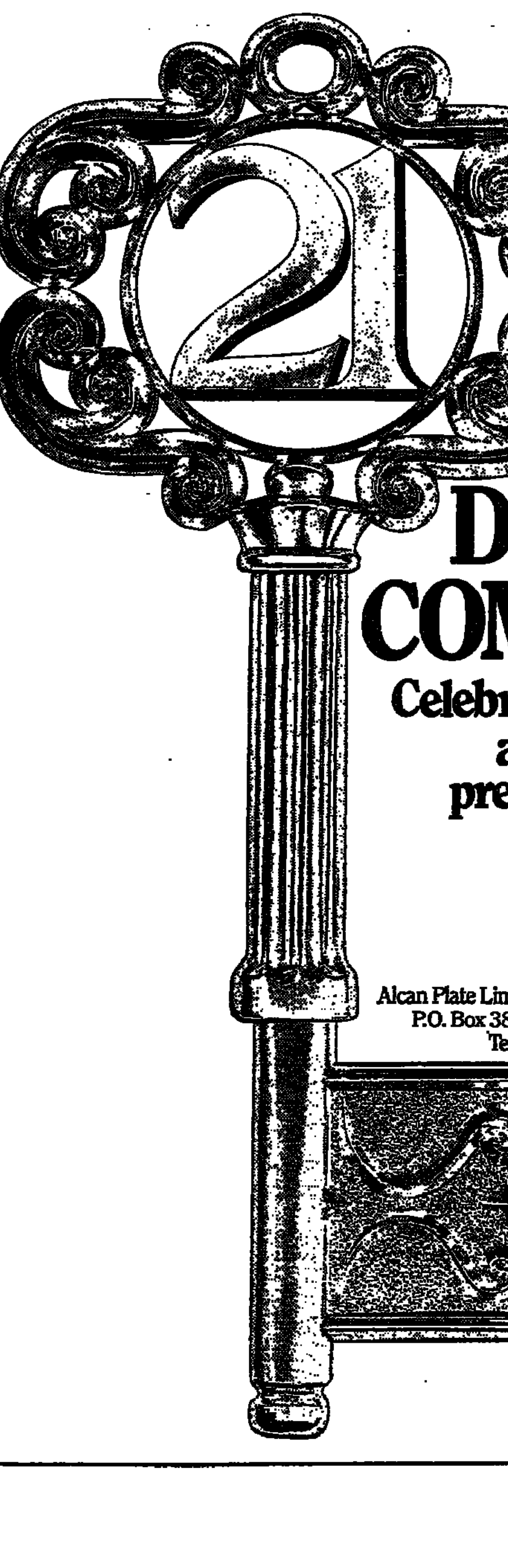
But it is not only in coating Galvalume that ICI expects to benefit from its Australian experience. According to Dr McGuiness "we have teams working on several things that are now coming to fruition." Possibly the most important of these from a long-term high sales volume point of view is called Compolex.

This is a water-borne, universal primer developed out of fundamental polymer research. The primer is already running successfully on Australian aluminium and is now undergoing production trials on Galvalume. Results are expected by mid-year.

With PPG, Becker and BASF also on the universal primer trail, the fight to be first could well be won as a result of having proved the new coating in Australia. ICI's trials there are being watched with interest, therefore, not only in Europe but in the U.S. and Japan too.

In Europe, however, ICI is now consolidating in coil, having come in late, but with enormous technical, financial and managerial clout. The fight for the coaters' confidence in the age of Galvalume should be very interesting—for the spectators.





The European Coil Coating Association

Drive to tap new markets

A MUCH stronger marketing outlook has become apparent in the European Coil Coating Association in the last few months. The ECCA has reorganised its Brussels office, sorted out its information and promotional services, and has been putting much more effort into promoting the industry's products rather than itself.

These are significant changes in outlook and approach which could boost natural growth of the industry further. That natural growth is, of course, the major reason why the ECCA has taken so long to get itself fully oriented in a marketing direction.

Founded in 1966, the organisation set out to research, promote and study all aspects of coil coating. Most of its members are not coil coaters, but suppliers of paint, chemicals, plant and equipment. Only 51 are coil coaters, all of them customers or potential customers of the other members.

But with the steel industry in particular notoriously production-oriented throughout Europe, the ECCA has appeared somewhat introverted for most of its life. The fact that markets were growing anyway hardly encouraged people to ask if they were growing as fast as they might.

So ECCA's conferences have sometimes appeared to be well-run technical gatherings where hard-headed production men met to hear weighty papers on important, but sometimes esoteric matters.

On top of that is the jargon of the industry itself. Even the name "coil coating" brings puzzled looks from non-technical managers in manufacturing or construction or the financial sector—the very decision-makers to whom the concept, with its potential for saving or safeguarding large sums of money, ought to appeal.

The analogy is with trying to sell Mars bars through long discourses on how to make chocolate, nougat and toffee and what the problems are in printing the name on the wrapper.

The ECCA's change in outlook has come about gradually over the last two or three years, followed by a spurt forward as a result of reorganising things in Brussels more recently.

Some of the change has undoubtedly been due to Mr Norman Makins, recently retired from British Steel, who finishes a two-year stint as ECCA president this summer, when he will be succeeded by Mr Henry Otto of the Dutch coil coater, Hunter Douglas, another man with the strong marketing outlook.

Mr Makins says: "Growth has been phenomenal over the last decade and has continued despite recession. But the industry cannot afford to relax. There is a need to develop existing markets and identify and exploit new ones."

Mr Otto is concerned about complacency among coaters who have been doing well without having to try very hard in the marketplace. He says: "They assume that anyone who makes products from aluminium or steel is already fully alert to the advantages of coil coating.

Vigorous promotion

"This is a dangerous assumption, particularly in key industrial sectors where alternative products and processes are being marketed aggressively.

"With European industry coming out of recession I expect the ECCA and its members to consolidate on gains made already and be ready to capitalise on new market opportunities."

Catching any upswing in the European economy is seen as vital to coil coating's further growth. Promotion of existing and new end-uses is in turn seen as critical in achieving that, with drives on in the white goods market, and in the use of expensively coated, technically advanced steel substrates for a much wider range of buildings than factories and offices.

Some individual coaters have been doing such promotion quite vigorously already, of course, and some suppliers have also worked hard to get the "paint first, fabricate later" message across to senior managers responsible for investment decisions. But the industry as a whole in Europe has failed in this area, a stark contrast to the ECCA's counterpart in the U.S.

To change this the association's marketing committee has been beefed up under the chairmanship of Mr Sam George, British Steel's sales manager for coated products. For the first time in ECCA history this committee now seems to be regarded as more important than its technical counterpart.

Mr Ed Crockett, who has this year been working full-time as the ECCA's marketing consultant, says: "The immediate problem areas were easy to identify, such as linguistic barriers, heterogeneous product ranges, entrenched "marketing" philosophies, and reluctance to disclose some information. Solutions have been less obvious."

He says that there has been a developing realisation that collective action is not only possible but capable of being effective. "Above all, there is a new willingness to bridge the gap between coil coater and the industrial end-user by examining potential problem areas and possible reasons for product resistance," he adds.

Changes at the ECCA's headquarters in the Rue Montoyer have seen Ms Maria Dam appointed to its secretaryship. She has set about improving feedback both from the marketplace and from members to the Brussels secretariat and expects this to make a great deal of difference to the ECCA's management of information about the industry.

Much of this is now in a large loose-leaf binder issued to members and divided into 15 sections covering such subjects as market trends, new required reading, technical developments and statistics. It is updated monthly.

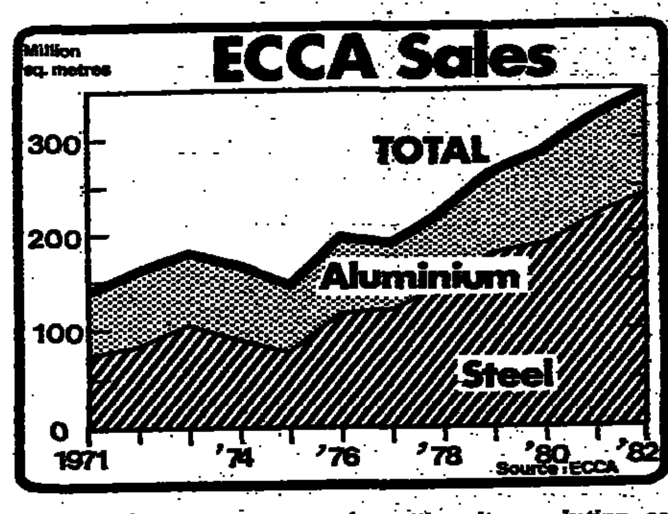
At the same time an ambitious handbook on what the industry does and can do is being prepared, the ECCA is going into more trade fairs, and an audio-visual presentation is on the way.

Another sign that the industry is getting its marketing act together is that members are putting up money for joint promotion, with national member groups exploring the possibilities of direct mail marketing and collective national and international advertising campaigns.

Mr Henry Otto, president-designate: concerned about complacency

Mr Ed Crockett, marketing consultant: encouraging collective action

Ms Maria Dam, secretariat head: improving feedback from the marketplace



The example of the National Coil Coating Association in the U.S. is clearly in everyone's mind. There, the NCCA's main role in the 1970s was to lobby hard in Washington to fight the prospects of the industry being hampered unreasonably by anti-pollution legislation.

But the arrival of the Reagan administration and recession changed priorities overnight and the NCCA switched most of its efforts into finding new markets for the industry as a whole. This led to large gains in the white goods sector and in the manufacture of other domestic appliances, with most new appliance production lines in 1983 designed for pre-finished raw material.

A new market was opened in houses and farm buildings, so that as recovery has started to revive the traditional construction market, the 'total' market for coated coil looks like becoming bigger than ever.

The ECCA hopes that Europe, properly persuaded for the first time, will now follow suit.

The international scene

Western eyes turn to Japan

THE "GOOD OLD DAYS" appear to be dawning again in the American coil coating industry. In the depths of recession these were remembered as the period up to 1979, when growth averaged an annual 16 per cent for more than 10 years.

Then, two years of slowing down were followed, in 1982, by a 13 per cent reverse. Last year, however, saw the industry bouncing back, putting on 12 per cent in the first half-year alone with spectacular gains in new markets.

A hot summer helped, sending up demand for air conditioners. This benefited coil coating because manufacturers had been sold on the "finish first, fabricate later" message, and used coated steel for casings and other components. This led to a 73 per cent rise in coated steel consumption for these products.

The coil coating message had been pushed hard during recession as a means of cutting down manufacturing costs through not having to run paint shops. This led to refrigerator makers in particular switching to pre-finished steel for outer wrappers and inner liners.

At the same time, makers of these and other domestic appliances designed any new lines to use finished raw material, with microwave ovens in particular emerging as a big and growing market. Overall, coated steel deliveries to the domestic appliance sector grew by 37 per cent to 54,500 tonnes in the half-year.

Weather windfall

Huge though this figure is, *however*, it must be seen against the large tonnages consumed by the U.S. building and car industries.

In fact, domestic appliances accounted for only 4 per cent of sales of coated coil — an exactly similar percentage to Europe, and possibly confirming the views of some European paintmakers that this market will never be the volume bonanza which some steelmakers have predicted.

In the U.S., the construction industry consumed 361,000 tonnes of coated steel and 108,000 of aluminium, the former growing by nearly 19 per cent year on year but the latter by less than 3 per cent. cent.

The weather provided another windfall, however, with farmers short of storage space for bumper grain crops. The coil coaters leapt in to promote quickly-erected coated steel barns that could also be used as multi-purpose sheds afterwards. The result was a 35 per cent growth in sales for farm uses.

Meanwhile, in Europe the growth of coil coating slowed to 7.4 per cent in 1982 as recession bit. But here too it has bounced back in 1983. Roof and wall claddings showing nearly 30 per cent growth in the early part of the year, and other exterior uses went up by nearly 20 per cent. But interior uses, such as floors and ceilings, rose by only 3.5 per cent.

In Europe, national producers continued to dominate home markets, with the real fight for market share taking place among paintmakers. Theoretically, there can be quota-free competition on finished goods but this is marginal.

The German steelmaker, Hoesch, has adapted its Pladul heat transfer printing system (above) so that continuous patterns can be produced on coil coating lines.

The steelmakers of Britain, Germany, France and Italy each hold monopolies in their own countries and though a small country like Belgium will *attack all of them*, the *impact* is relatively minor, especially in a growing total market.

Nevertheless, Belgium's Phenix has gone ahead with its third coil coating line, a modern one capable of coating 200,000 tonnes a year on its own, which is almost as much as British Steel will produce on five lines in 1984.

With Phenix's growth rate running at about 25 per cent a year—compared with a European average of 15 per cent and projections of 8-10 per cent—other coaters may be put on their mettle. The new line is expected to concentrate on building industry products. Phenix already claims a 10 per cent share of the total European market.

Meanwhile, Sweden is second only to the U.S. in per capita consumption of precoated sheet, with annual output recently estimated at 15 per cent of the European total. Since its own home market for building claddings is now saturated, however, the search for new markets is particularly vigorous.

Decoration

In Germany there is a strong movement towards decoration in coatings, with Hoesch Siegerlandwerke and the paintmaker Weilburger developing techniques for continuous printing of decorative motifs onto precoated sheet.

This started life as Hoesch's Pladur system for heat transfer printing on to individual sheets, a costly batch process.

The new process puts the decoration onto the coil, the system comprising a primer, topcoat and the transfer printing of the design from preprinted paper. What is ingenious about it is that the topcoat is completely clear, so that the pigments forming the pattern are diffused at high temperatures through the paint to end up under the topcoat.

This makes it impossible for the designs to be removed or damaged when the coil is unrolled for shearing, stamping, drawing, seaming or roll-forming. The cured coating has high thermal resistance (up to 150 degrees C) so the process is particularly suitable for decorative houseware, such as toasters, bread bins, and deep fryers.

AEG is already making freezers with traditional Bavarian decorative patterns. Though these may not be to British taste, Weilburger's UK manager, Mr Tim Rand, newly-based in Warrington, says that new designs to appeal to the British market are on the way.

The new process also means that "steel wallpaper" can be produced, with finishes indistinguishable from, say, real marble, or with four colour landscapes. Given good decorative designwork, the internal wall claddings market could be about to open up in a very big way.

Meanwhile, Western eyes have recently been on Japan to see if its steel and paint industries have spotted something the Europeans and Americans have missed.

An ECCA delegation drawn from all over Europe visited Japan last month to find that the major problems in the market there were developing coatings that would withstand tremendous climatic abuse. The problems arise from Japan's yearly mixture of maritime weather, typhoons, wide extremes of temperature and earthquakes.

Dr Bob McGuiness of ICI said *afterwards*: "*We saw nothing* to suggest that they would be coming *into* the European market next week. But we all came away with a healthy respect for their way of working."

Apparently, the industry in Europe, proud though it is of being highly capital intensive, has much to learn from Japan, where every line seen was run by far fewer people than would be required in Europe.

With all the developed countries pushing hard to make increasingly *more appliances* and consumer durables out of prefinished steel, the implications are that productivity on the coil coating line must surely have some eventual influence on the price of the finished goods in the High Street.

So despite the fact that most high volume coil coaters will probably continue to enjoy monopolies in their national home markets for building products, manning the technology efficiently is bound to affect international competitiveness in other key areas.